



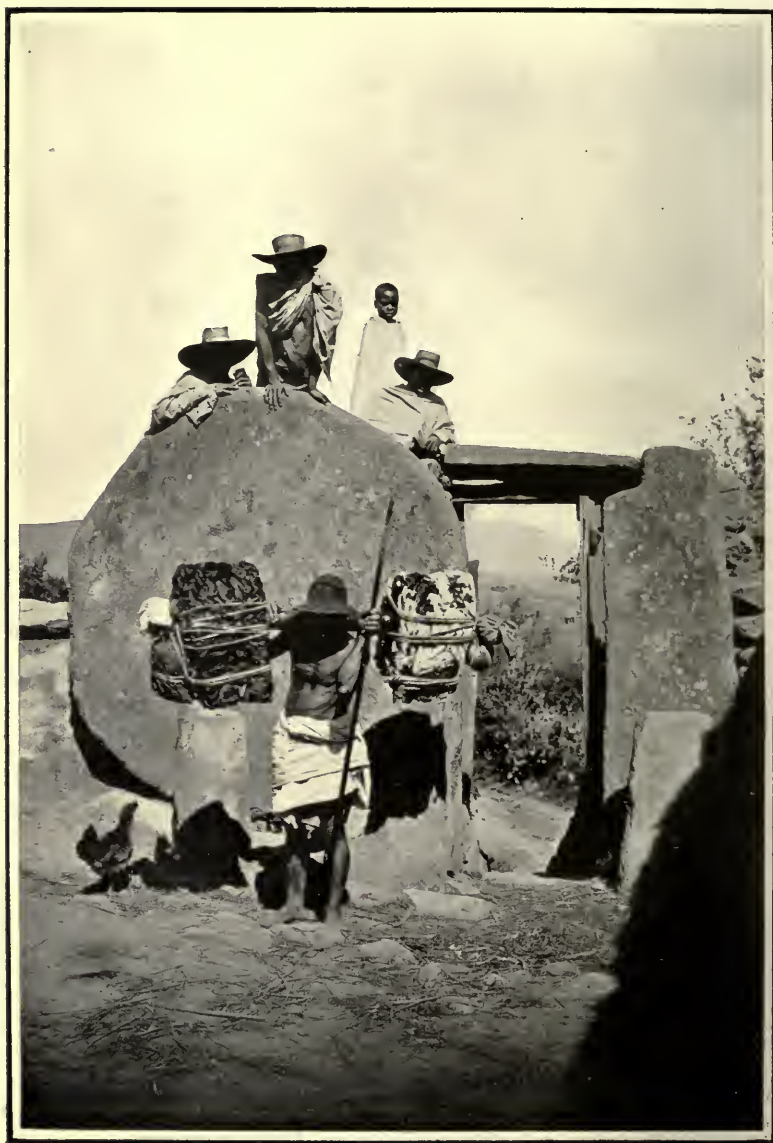


THE LIBRARY
OF
THE UNIVERSITY
OF CALIFORNIA
LOS ANGELES



Digitized by the Internet Archive
in 2007 with funding from
Microsoft Corporation





OLD VILLAGE GATEWAY WITH CIRCULAR STONE

The stone is levered into position closing the opening. A deep fosse or ditch surrounding the village completes its fortification. The man in front is carrying two packages secured to a pole in the usual manner of the country

A NATURALIST IN MADAGASCAR

*A Record of Observation Experiences and
Impressions made during a period of over Fifty Years'
Intimate Association with the Natives and Study of the
Animal & Vegetable Life of the Island*

BY

JAMES SIBREE, F.R.G.S.

Membre de l'Academie Malgache

AUTHOR OF "THE GREAT AFRICAN ISLAND," "MADAGASCAR ORNITHOLOGY,"
tc., tc., tc.

WITH 52 ILLUSTRATIONS & 3 MAPS

PHILADELPHIA
J. B. LIPPINCOTT COMPANY
LONDON: SEELEY, SERVICE & CO. LTD.

1915

DT
469
M26556m

Dedicated
WITH MUCH AFFECTION TO
MY DEAR WIFE
MY CONSTANT COMPANION IN MADAGASCAR
AND FAITHFUL HELPER IN ALL
MY WORK FOR FORTY-
FOUR YEARS

943457

PREFACE

THE title of this book may perhaps be considered by some as too ambitious, and may provoke comparison with others somewhat similar in name, but with whose distinguished authors I have no claim at all to compete.

I have no tales to tell of hair-breadth escapes from savage beasts, no shooting of "big game," no stalking of elephant or rhinoceros, of "hippo" or giraffe. We have indeed no big game in Madagascar. The most dangerous sport in its woods is hunting the wild boar; the largest carnivore to be met with is the fierce little *fòsa*, and the crocodile is the most dangerous reptile.

But I ask the courteous reader to wander with me into the wonderful and mysterious forests, and to observe the gentle lemurs in their home, as they leap from tree to tree, or take refuge in the thickets of bamboo; to come out in the dusk and watch the aye-aye as he stealthily glides along the branches, obtaining his insect food under the bark of the trees; to listen to the song of numerous birds, and to note their habits and curious ways; to hear the legends and folk-tales in which the Malagasy have preserved the wisdom of their ancestors with regard to the feathered denizens of the woods and plains, and to admire the luxuriant vegetation of the forests, and the trees and plants, the ferns and flowers, and even the grasses, which are to be found in every part of the island.

I invite those who may read these pages to look with me at the little rodents and insect-eaters which abound in and near the woods; to mark the changing chameleons which are found here in such variety; to watch the insects which gambol in the sunshine, or hide in the long grass, or sport on the streams. If such unexciting pleasures as these can interest my readers, I

can promise that there is in Madagascar enough and to spare to delight the eye and to charm the imagination.

I confess that I am one of those who take much more delight in silently watching the birds and their pretty ways in some quiet nook in the woods, than in shooting them to add a specimen to a museum; and that I feel somewhat of a pang in catching even a butterfly, and would much rather observe its lovely colours in life, as it unfolds them to the sunshine, than study it impaled on a pin in a cabinet. No doubt collections are necessary, but I have never cared to make them myself.

Nothing is here recorded but facts which have come under my own observation or as related by friends and others whose authority is unquestionable. And while my main object is to convey a vivid and true impression of the animal and vegetable life of Madagascar, I have also given many sketches of what is curious and interesting in the habits and customs of the Malagasy people, among whom I have travelled repeatedly, and with whom I have lived for many years. I have no pretensions to be a scientific naturalist or botanist, I have only been a careful observer of the beautiful and wonderful things that I have seen and I have constantly noted down what many others have observed, and have here included information which they have given in the following pages.

I have long wished that someone far more competent than myself would write a popular book upon the natural history and botany of this great island; but as I have not yet heard of any such, I venture with some diffidence to add this book to the large amount of literature already existing about Madagascar, but none of it exactly filling this place. For many years I edited, together with my late friend and colleague, the Rev. R. Baron, the numbers of *The Antananarivo Annual*, a publication which was "a record of information on the topography and natural productions of Madagascar, and the customs, traditions, language and religious beliefs of its people," and for which I was always on the lookout for facts of all kinds

bearing on the above-mentioned subjects. But as this magazine was not known to the general public, and was confined to a very limited circle of readers, I have not hesitated to draw freely on the contents of its twenty-four numbers, as I am confident that a great deal of the information there contained is worthy of a much wider circulation than it had in the pages of the *Annual*.

Finally, as preachers say, although this book is written by a missionary, it is not "a missionary book"; not, certainly, because I undervalue missionary work, in which, after nearly fifty years' acquaintance with it, and taking an active part in it, I believe with all my heart and soul, but because that aspect of Madagascar has already been so fully treated. Books written by the Revs. W. Ellis, Dr Mullens, Mr Prout, Dr Matthews, Mr Houlder, myself and others, give all that is necessary to understand the wonderful history of Christianity in this island. Despite what globe-trotting critics may say, as well as colonists who seem to consider that all coloured peoples may be exploited for their own benefit, mission work, apart from its simply obeying the last commands of our Lord, is *the* great civilising, educational and benevolent influence in the world, deny it who can! But in this book I want to show that Madagascar is full of interest in other directions, and that the wonderful things that live and grow here are hardly less worthy of study than those events which have attracted the attention of Christian and benevolent people for nearly a hundred years past.

The author thanks very sincerely his friends, Mr John Parrett, Monsieur Henri Noyer, and Razaka, for their freely accorded permission to reproduce many photographs taken by them and used to illustrate this book. And his grateful thanks are also due to his old friend, the Rev. J. Peill, for the care he has taken in going through the proof sheets, especially in seeing that all Madagascar words are correctly given.

Two or three chapters of this book cover, to some extent, the same ground as those treated of in another book on

Madagascar by the author, published some years ago by Mr Fisher Unwin. The author here acknowledges, with many thanks, Mr Fisher Unwin's kindness in giving full permission to produce these, which are, however, rewritten and largely added to.

J. S.

NOTE.—Throughout this book Malagasy words are accented on the syllables which should be emphasised, and if it is borne in mind that the vowels *a*, *e* and *i* have as nearly as possible the same sound as in French or Italian, and that *o* is exactly like our English *o* in *do*, *to* and *move*, and that the consonants do not differ much in sound from those in English, except that *g* is always hard, *s* always a sibilant and not like *z*, and *j* is like *dj* there will be no difficulty in pronouncing Malagasy words with a fair amount of accuracy.

CONTENTS

CHAPTER I

	PAGE
INTRODUCTORY	17
Natural History of the Island—Still Little Known—Roads and Railway—We travel by Old-Fashioned Modes—Great Size and Extent of Madagascar	

CHAPTER II

TAMATAVE AND FIRST IMPRESSIONS OF THE COUNTRY	20
"The Bullocker"—Landing at Tamatave—Meet with New Friends—Landing our Luggage—Bullocks and Bullock Ships—Native Houses—Strange Articles of Food—A Bed on a Counter—First Ride in a <i>Filanjàna</i> —At the Fort—The Governor and his "Get-Up"—A Rough-and-Ready Canteen	

CHAPTER III

FROM COAST TO CAPITAL : ALONG THE SEASHORE	27
Travelling in Madagascar—Absence of Roads—"General Forest and General Fever"—Pleasures and Penalties of Travel—Start for the Interior—My Private Carriage—Night at Hivondrona—Native Canoes—Gigantic Arums—Crows and Egrets—Malagasy Cattle—Curious Crabs—Shells of the Shore—Coast Lagoons—Lovely Scenery—Pandanus and Tangèna Trees—Pumice from Krakatoa—Sea and River Fishes—Prawns and Sharks—Hospitable Natives—Trees, Fruits and Flowers—"The Churchyard of Foreigners"—Unpleasant Style of Cemetery—"The Hole of Serpents"—Killing a Boa-constrictor—The White-fronted Lemur—Andòvorànto—How the Aye-Aye was caught—What he is like—And where he lives—A Damp Journey	

CHAPTER IV

FROM COAST TO CAPITAL : ANDÒVORÀNTO TO MID-FOREST	48
A Canoe Voyage—Crocodiles and their Ways—River Scenery—Traveller's Tree—Which is also "The Builder's Tree"—Maròmby—Coffee Plantation—Orange Grove—We stick in the Mud—Difficulties of Road—Rànomafàna and its Hot Springs—Lace-leaf Plant—Native Granaries—Endurance of Bearers—Native Traders—Appearance of the People—Native Music and Instruments—Bamboos—Ampàsimbé—Cloth Weaving—Native Looms— <i>Rofia</i> -palms—"A Night with the Rats"—Hard Traveling—Béfòrona—The Two Forest Belts—The Highest Mountains—Forest of Alamazaotra—Villages on Route—The Blow-Gun	

CHAPTER V

FROM COAST TO CAPITAL : ALAMAZAOTRA TO ANTANÀNARIVO .	PAGE 63
"Weeping-place of Bullocks"—"Great Princess" Rock— Grandeur of the Vegetation—Scarcity of Flowers—Orchids, Bamboos, and Pendent Lichens—Apparent Paucity of Animal Life—Remarkable Fauna of Madagascar—Geological Theories thereon—Lemurs—The Ankey Plain—An Ancient Lake— Mòramànga—River Mangòro—Grand Prospect from Ifòdy— The Tàkatra and Its Nest—Hova Houses—Insect Life—Angàvo Rock—Upper Forest—Treeless Aspect of Imèrina—Granite Rocks—Ambàtomànga—And its big House—Grass Burning— First View of Capital—Its Size and Situation—Hova Villages— A Cloud of Locusts—Reach Antanànarivo	

CHAPTER VI

THE CHANGING MONTHS IN IMÈRINA : CLIMATE, VEGETATION AND LIVING CREATURES OF THE INTERIOR .	75
The Seasons in Madagascar—Their Significant Names—Pro- spect from Summit of Antanànarivo—Great Rice-plain—An Inundation of the Same—Springtime : September and October— Rice-planting and Rice-fields—Trees and Foliage—Common Fruits—"Burning the Downs"—Birds—Hawks and Kestrels— Summer : November to February—Thunderstorms and Tropical Rains—Lightning and its Freaks—Effects of Rain on Roads— Rainfall—Hail—Magnificent Lightning Effects—Malagasy New Year	

CHAPTER VII

SPRING AND SUMMER .	90
Native Calendar—Conspicuous Flowers— <u>Aloes and Agaves</u> — Uniformity of Length of Days—Native Words and Phrases for Divisions of Time—And for Natural Phenomena—Hova Houses —Wooden and Clay—Their Arrangement—And Furniture— "The Sacred Corner"—Solitary Wasps—Their Victims—The Cell-builders—The Burrowers—Wild Flowers	

CHAPTER VIII

THE CHANGING MONTHS IN IMÈRINA : CLIMATE, VEGETATION, AND LIVING CREATURES OF THE INTERIOR .	103
Autumn : March and April—Rice Harvest—The Cardinal- Bird—The Egret and the Crow—Harvest Thanksgiving Services —Rice, the Malagasy Staff of Life—Queer "Relishes to Rice"— Fish—Water-beetles—A Dangerous Adventure with One— Dragonflies—Useful Sedges and Rushes—Mist Effects on Winter Mornings—Spiders' Webs—The "Fosse-Crosser" Spider—Silk from it—Silk-worm Moths—And Other Moths—The "King" Butterfly—Grasshoppers and Insect Life on the Grass—The Dog- Locust—Gigantic Earthworms—Winter : May to August— Winter the Dry Season	

CONTENTS

11

CHAPTER IX

AUTUMN AND WINTER

PAGE
116

Old Towns—Ancient and Modern Tombs—Memorial Stones—Great Markets—Imèrina Villages—Their Elaborate Defences—Native Houses—Houses of Nobles—Hova Children—Their Dress and Games—Village Churches—And Schools—A School Examination—Aspects of Nightly Sky Epidemics in Cold Season—Vegetation

CHAPTER X

AT THE FOREST SANATORIUM

127

A Holiday at Ankèramadlnika—The Upper Forest Belt—The Flora of Madagascar—Troubles and Joys of a Collector—A Silken Bag—Ants and their Nests—In Trees and Burrows—Caterpillars and Winter Sleep—Butterflies' Eggs—Snakes, Lizards and Chameleons—An Arboreal Lizard—Effects of Terror—Some Extraordinary Chameleons—The River-Hog—Sun-birds

CHAPTER XI

FOREST SCENES

140

Forest Scenes and Sounds—The Goatsucker—Owls—Flowers and Berries—Palms and other Trees—The Bamboo-palm—Climbing Plants—Mosses, Lichens and Fungi—Their Beautiful Colours—Honey—The Madagascar Bee—Its Habits and its Enemies—Forest People—The Bètròsy Tribe—A Wild-Man-of-the-Woods—A Cyclone in the Forest—A Night of Peril

CHAPTER XII

RAMBLES IN THE UPPER FOREST

150

Forest Parts—Lost in the Woods—Native Proverbs and Dread of the Forest—Waterfalls—A Brilliant Frog—Frogs and their Croaking—A Nest-building Frog—Protective Resemblances and Mimicry—Beetles—Brilliant Bugs—Memorial Mounds—Iron Smelting—Feather Bellows—Depths of the Ravines—Forest Leeches—Ferns—Dyes, Gums and Resins—Candle-nut Tree—Medicinal Trees and Plants—Useful Timber Trees—Superstitions about the Forest—Marvellous Creatures—The Ball Insect—Millipedes and Centipedes—Scorpions

CHAPTER XIII

FAUNA

162

The Red-spot Spider—Various and Curious Spiders—Protective Resemblances among them—Trap-door Spiders—The Centetidæ—Malagasy Hedgehogs—The Lemurs—The Propithecques—The Red Lemur—Pensile Weaver-bird—The Bee-eater—The Coua Cuckoos—The Glory and Mystery of the Forests—A Night in the Forest

CHAPTER XIV

ROUND ANTSlHÀNAKA	PAGE 173
Object of the Journey—My Companions—The Antsihàna Province—Origin of the People—Anjozòrobé—"Travellers' Bungalow"—A Sunday there—"Our Black Chaplain"—The "Stone Gateway"—Ankay Plain—Ants and Serpents—Hair-dressing and Ornaments— <i>Toàka</i> Drinking—Rice Culture—Fragrant Grasses—The Glory of the Grass—Their Height—Capital of the Province—We interview the Governor—Flowers of Oratory—The Market—Fruits and Fertility—A Circuit of the Province—Burial Memorials—Herds of Oxen—Horns as Symbols—Malagasy Use of Oxen—A Sihàna House—Mats and Mat-making—Water-fowl—Their Immense Numbers—Teal and Ducks—The Fen Country—Physical Features of Antsihàna—The Great Plain—Ampàrafàravòla—Hymn-singing—Sihàna Bearers—"Wild-Hog's Spear" Grass—Dinner with the Lieutenant-Governor—"How is the Gun?"—Volcanic Action—Awkward Bridges—Fighting an Ox—Occupations of the People—Cattle-tending—Rice Culture—Fishing—Buds	

CHAPTER XV

LAKE SCENERY	193
The Alaotra Lake—Lake Scenery—A Damp Resting-place—Shortened Oratory—We cross the Lake—An Ancient and Immense Lake—The Crocodile—Mythical Water-creatures—A Pleasant Meeting—"Manypoies" Village—A Sihàna Funeral—Treatment of Widows—A Village in the Swamp—Unlucky Days and Taboos—Madagascar Grasses—We turn Homewards	

CHAPTER XVI

LAKE ITÀSY	208
Old Volcanoes—Lake Itàsy—Distant Views of it—Legends as to its Formation—Flamingoes—Water-hens—Jacanas—Other Birds—Antslrabé—Hot Springs—Extinct Hippopotami—Gigantic Birds—Enormous Eggs ✓	

CHAPTER XVII

VOLCANIC DISTRICT	215
Crater Lake of Andraikiba—Crater Lake of Trîtrîva—Colour of Water—Remarkable Appearance of Lake—Legends about it—Its Depth—View from Crater Walls—Ankàratra Mountain—Lava Outflows—An Underground River—Extinct Lemuroid Animals—Graveyard of an Ancient Fauna—The Palæontology—And Geology of Madagascar—Volcanic Phenomena—The Madagascar Volcanic Belt—Earthquakes—A Glimpse of the Past Animal Life of the Island ✓	

CHAPTER XVIII

SOUTHWARDS TO BÉTSILÉO AND THE SOUTH-EAST COAST	PAGE 228
---	-------------

Why I went South—How to secure your Bearers—The Old Style of Travelling—Route to Fiànàrantsòà—Scenery—Elaborate Rice Culture—Bétsiléó Ornament and Art—Burial Memorials—We leave for the Unknown—A Bridal Obligation—Mountains and Rocks—Parakeets and Parrots—A Dangerous Bridge—Ant-hills—The Malagasy Hades—Brotherhood by Blood—Bétsiléó Houses—"The Travelling Foreigners in their Tent"—A Tanàla Forest—Waterfalls—A Tanàla House—Female Adornment

CHAPTER XIX

IVOHITRÒSA	246
----------------------	-----

Ivohitròsa—Native Dress—a Grand Waterfall—Wild Raspberries—The Ring-tailed Lemur—The Mouse-Lemur—A Heathen Congregation—Unlucky Days—Month Names—The *Zàhitra* Raft—A Village Belle and her "Get-up"—The Cardamom Plant—Beads, Charms and Arms—Bamboos and Pandanus—A Forest Altar—Rafts and Canoes—Crocodiles—Their Bird Friends—Ordeal by Crocodile—Elegant Coiffure—A Curious Congregation—Ambòhipèno Fort—We reach the Sea—Gigantic Arums—Sea-shells—Pulpit Decoration—Butterflies—Protective Structure in a Certain Species—An Arab Colony—Arabic Manuscripts—Frigate-birds and Tropic-birds—Other Sea-birds

CHAPTER XX

AMONG THE SOUTH-EASTERN PEOPLES	257
---	-----

Hova Conquest of and Cruelties to the Coast Tribes—The Traveller's Tree and its Fruits—A Hova Fort—Ball Head-dressing—Rice-fields—Volcanic Phenomena—Vòavòntaka Fruit—A Well-dunged Village—Water from the Traveller's Tree—We are stopped on our Way—A Native Distillery—Taisàka Mat Clothing—Bark Cloth—Native Houses and their Arrangement—Secondary Rocks—Ankàrana Fort—A Hospitable Reception—A Noisy Feast—"A Fine Old *Malagasy* Gentleman"—A Hearty "Set-Off"—Primitive Spoons and Dishes—Burial Memorials

CHAPTER XXI

THE SOUTH-EASTERN PEOPLES	270
-------------------------------------	-----

A Built Boat—In the Bush—A Canoe Voyage—Canoe Songs—The *Angræcum* Orchids—Pandanus and Atàfa Trees—Coast Lagoons—A Native Dance—A Wheeled Vehicle—Lost in the Woods—A Fatiguing Sunday—Dolphins and Whales—Forest Scenery—A Tanàla Funeral—Silence of the Woods—The Sound of the Cicada—Mammalian Life—Hedgehogs and Rats—Why

CHAPTER XXI—*continued*

PAGE

are Birds comparatively so few?—Insect Life in the Forest—A Stick-Insect—Protective Resemblances—The Curious Broad-bill Bird—Minute Animal Life in a River Plant—Ambohimanga in the Forest—A Tanala Chieftainess—River-fording and Craft—We reach the Interior Highland—Bétsileo Tombs—Return to Antanànarivo

CHAPTER XXII

TO SAKALÀVA LAND AND THE NORTH-WEST . . . 285

North-West Route to the Coast—River Embankments—Mission Stations—A Lady Bricklayer—In a Fosse with the Cattle—An Airy Church on a Stormy Night—A Strange Chameleon—The "Short" Mosquitoes—Ant-hills and Serpents—A Sacred Tree—Andriba Hill and Fort—An Evening Bath and a Hasty Breakfast—Parakeets, Hoopoes, and Bee-eaters—The Ikopa Valley—Granite Boulders—Mèvatanàna: a Birdcage Town—We form an Exhibition for the Natives—Our Canoes—Crocodiles—Shrikes and Fly-catchers—Tamarind-trees—Camping Out—The "Agy" Stinging Creeper—River Scenery—Fan-palms—Scaly Reptiles and Beautiful Birds—Fruit-eating and Other Bats—Secondary Rocks—Sparse Population—The Sakalàva Tribes—A Vile-smelling Tree

CHAPTER XXIII

TO THE NORTH-WEST COAST . . . 301

Tortoises—Gigantic Tortoises of Aldabra Island—Park-like Scenery—The Fierce Little Fosa—Small Carnivora—Beautiful Woods—"Many Crocodiles" Town—A Curious Pulpit—A Hot Night—A Voyage in a Dhow—Close Quarters on its Deck—An Arab Dhow and its Rig—Bémbatòka Bay—Mojangà—An Arab and Indian Town—An Ancient Arab Colony—Baobab-trees—Valuable Timber Trees—The Fishing Eagle—Turtles and Turtle-catching—Herons—The North-West Coast—A Fishing Fish—Oysters and Octopus—Nòsibé and Old Volcanoes—Our Last Glimpses of Madagascar

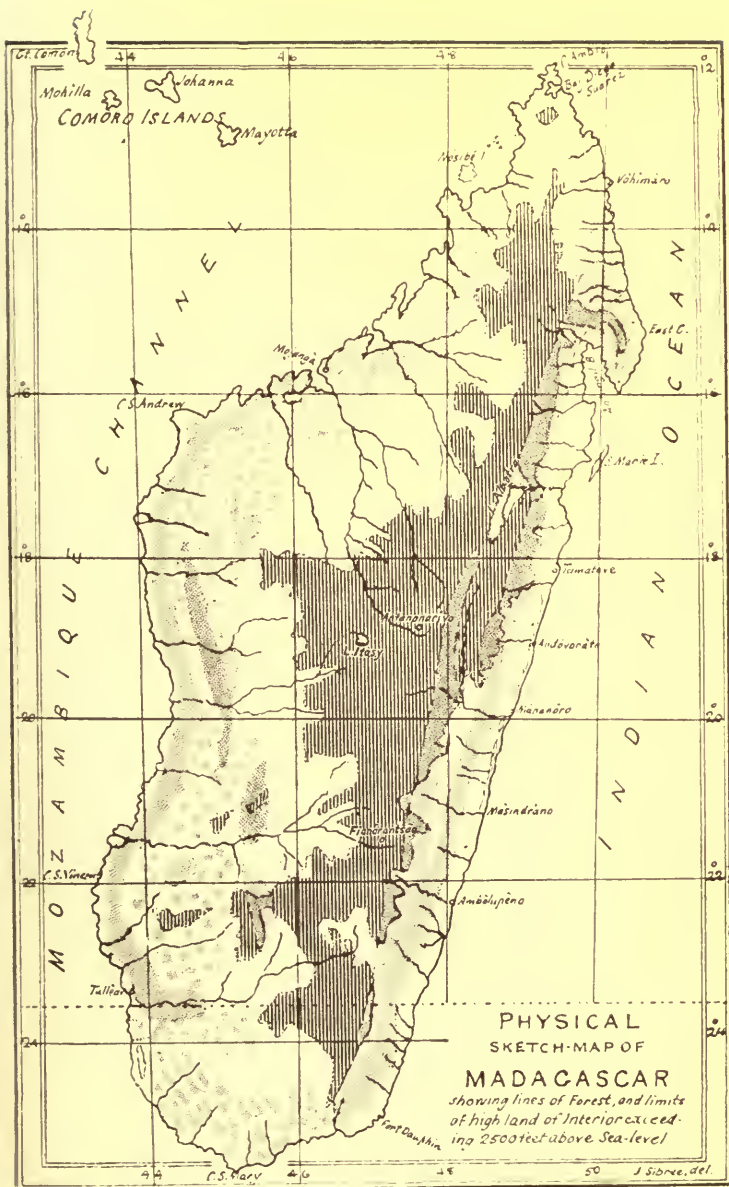
LIST OF ILLUSTRATIONS

Old Village Gateway with Circular Stone	<i>Frontispiece</i>
On the Coast Lagoons	FACING PAGE 28
A Forest Road	32
Low-class Girl fetching Water	50
A Sihanaka Woman playing the Vahiha	50
Betsimisaraka Women	58
Hova Women weaving	58
Family Tomb of the late Prime Minister, Antananarivo	66
Royal Tombs, Antananarivo	66
Earthenware Pottery	76
Digging up Rice-fields	76
Pounding and winnowing Rice	78
Hova Middle-class Family at a Meal	78
Rocks near Ambatovy	92
Typical Hova House in the Ancient Style	96
On the Coast Lagoons	106
Transplanting Rice	112
Hova Tombs	118
Friday Market at Antananarivo	120
Ancient Village Gateway	124
A Forest Village	134
Chameleons	136
Analamazaotra	146
Memorial Carved Posts and Ox Horns	156
Blacksmith at Work	156

	FACING PAGE
On the Coast Lagoons	166
Some Curious Madagascar Spiders	168
Sihanaka Men	176
Forest Village	176
A Wayside Market	180
Water-carriers	218
Hide-bearers resting by the Roadside	230
Betsileo Tombs	230
Memorial Stone	234
Types of Carved Ornamentation in Houses	236
" " "	238
Group of Tanala Girls in Full Dress	242
Tanala Girls singing and clapping Hands	242
Tanala Spearmen	248
Coiffures	250
A Forest River	252
Tree Ferns	260
Traveller's Trees	260
A Malagasy Orchid	272
Malagasy Men dancing	274
Woman of the Antankarana Tribe	278
Woman of the Antanosy Tribe	278
The Fosa	302
Malagasy Oxen	302

MAPS

Ethnographical Sketch Maps of Madagascar	15
Physical Sketch Map of Madagascar	16
General Map of Madagascar	314



A NATURALIST IN MADAGASCAR

CHAPTER I

INTRODUCTORY

THE great African island of Madagascar has become well known to Europeans during the last half-century, and especially since the year 1895, when it was made a colony of France. During that fifty years many books—the majority of these in the French language—have been written about the island and its people ; what was formerly an almost unknown country has been traversed by Europeans in all directions ; its physical geography is now clearly understood ; since the French occupation it has been scientifically surveyed, and a considerable part of the interior has been laid down with almost as much detail as an English ordnance map. But although very much information has been collected with regard to the country, the people, the geology, and the animal and vegetable productions of Madagascar, there has hitherto been no attempt, at least in the English language, to collect these many scattered notices of the Malagasy fauna and flora, and to present them to the public in a readable form.

In several volumes of a monumental work that has been in progress for many years past, written and edited by M. Alfred Grandidier,¹ the natural history and the botany of the island are being exhaustively described in scientific fashion ; but these great quartos are in the French language, while their costly character renders them unknown books to the general reader. It is the object of the following pages to describe, in as familiar and popular a fashion as may be, many of the most interesting facts connected with the exceptional animal life of Madagascar, and with its forestal and other vegetable productions. During

nearly fifty years' connection with this country the writer has travelled over it in many directions, and while his chief time and energies have of course been given to missionary effort, he has always taken a deep interest in the living creatures which inhabit the island, as well as in its luxuriant flora, and has always been collecting information about them. The facts thus obtained are embodied in the following pages.

It is probably well known to most readers of this book that a railway now connects Tamatave, the chief port of the east coast, with Antanànarivo, the capital, which is about a third of the way across the island. So that the journey from the coast to the interior, which, up to the year 1899, used to take from eight to ten days, can now be accomplished in one day. Besides this, good roads now traverse the country in several directions, so that wheeled vehicles can be used ; and on some of these a service of motor cars keeps up regular communication with many of the chief towns and the capital.

But we shall not, in these pages, have much to do with these modern innovations, for a railway in Madagascar is very much like a railway in Europe. Our journeys will mostly be taken by the old-fashioned native conveyance, the *filanjàna* or light palanquin, carried by four stout and trusty native bearers. We shall thus not be whirled through the most interesting portion of our route, catching only a momentary glimpse of many a beautiful scene. We can get down and walk, whenever we like, to observe bird or beast or insect, to gather flower or fern or lichen or moss, or to take a rock specimen, things utterly impracticable either by railway or motor car, and not very easy to do in any wheeled conveyance. Our object will be, not to get through the journey as fast as possible, but to observe all that is worth notice during the journey. We shall therefore, in this style of travel, not stay in modern hotels, but in native houses, notwithstanding their drawbacks and discomforts ; and thus we shall see the Malagasy as they are, and as their ancestors have been for generations gone by, almost untouched by European influence, and so be able to observe their manners and customs, and learn something of their ideas, their superstitions, their folk-lore, and the many other ways in which they differ from ourselves.

Let us, however, first try to get a clear notion about this great

island, and to realise how large a country it is. Take a fair-sized map of Madagascar, and we see that it rises like some huge sea-monster from the waters of the Indian Ocean ; or, to use another comparison, how its outline is very like the sole—the left-hand one—of a human foot. As we usually look at the island in connection with a map of Africa, it appears as a mere appendage to the great “Dark Continent” ; and it is difficult to believe that it is really a thousand miles long, and more than three hundred miles broad, with an area of two hundred and thirty thousand square miles, thus exceeding that of France, Belgium and Holland all put together.² Before the year 1871 all maps of Madagascar, as regards its interior, were pure guess-work. A great backbone of mountains was shown, with branches on either side, like a huge centipede. But it is now clear that, instead of these fancy pictures, there is an extensive elevated region occupying about two-thirds of the island to the east and north, leaving a wide stretch of low country to the west and south ; and as the watershed is much nearer the east than the west of the island, almost all the chief rivers flow, not into the Indian Ocean, but into the Mozambique Channel. When we add that a belt of dense forest runs all along the east side of Madagascar, and is continued, with many breaks, along the western side, and that scores of extinct volcanoes are found in several districts of the interior, we shall have said all that is necessary at present as to the physical geography. Many more details of this, as well as of the geology, will come under our notice as we travel through the country in various directions.

¹ *Histoire Physique, Naturelle et Politique de Madagascar*, publiée par Alfred Grandidiér, Paris, à l’Imprimerie Nationale ; in fifty-two volumes, quarto.

² I have often been astonished and amused by the notions some English people have about Madagascar. One gentleman asked me if it was not somewhere in Russia !—and a very intelligent lady once said to me : “ I suppose it is about as large as the Isle of Wight ! ”

CHAPTER II

TAMATAVE AND FIRST IMPRESSIONS OF THE COUNTRY

IT was on a bright morning in September, 1863, that I first came in sight of Madagascar. In those days there was no service of steamers, either of the "Castle" or the "Messageries Maritimes" lines, touching at any Madagascar port, and the passage from Mauritius had to be made in what were termed "bullockers." These vessels were small brigs or schooners which had been condemned for ordinary traffic, but were still considered good enough to convey from two to three hundred oxen from Tamatave to Port Louis or Réunion. It need hardly be said that the accommodation on board these ships was of the roughest, and the food was of the least appetising kind. A diet of cabbage, beans and pumpkin led one of my friends to describe the menu of the bullocker as "the green, the brown, and the yellow." Happily, the voyage to Madagascar was usually not very long, and in my case we had a quick and pleasant passage of three days only; but I hardly hoped that daylight on Wednesday morning would reveal the country on which my thoughts had been centred for several weeks past; so it was with a strange feeling of excitement that soon after daybreak I heard the captain calling to me down the hatchway: "We are in sight of land!" Not many minutes elapsed before I was on deck and looking with eager eyes upon the island in which eventually most of my life was to be spent. We were about five miles from the shore, running under easy sail to the northward, until the breeze from the sea should set in and enable us to enter the harbour of Tamatave.

There was no very striking feature in the scene—no towering volcanic peaks, as at Mauritius and Aden, yet it was not without beauty. A long line of blue mountains in the distance, covered with clouds; a comparatively level plain extending from the hills to the sea, green and fertile with cotton and sugar and rice plantations; while the shore was fringed with the tall

trunks and feathery crowns of the cocoanut-palms which rose among the low houses of the village of Tamatave. These, together with the coral reefs forming the harbour, over which the great waves thundered and foamed—all formed a picture thoroughly tropical, reminding me of views of islands in the South Pacific.

The harbour of Tamatave is protected by a coral reef, which has openings to the sea both north and south, the latter being the principal entrance ; it is somewhat difficult of access, and the ribs and framework of wrecked vessels are (or perhaps rather *were*) very frequently seen on the reef. The captain had told me that sometimes many hours and even days were spent in attempting to enter, and that it would probably be noon before we should anchor. I therefore went below to prepare for landing, but in less than an hour was startled to hear by the thunder of the waves on the reef and the shouts of the seamen reducing sail that we were already entering the harbour. The wind had proved unexpectedly favourable, and in a few more minutes the cable was rattling through the hawsehole, the anchor was dropped, and we swung round at our moorings.

There were several vessels in the harbour. Close to us was H.M.'s steamer *Gorgon*, and, farther away, two or three French men-of-war, among them the *Hermione* frigate, bearing the flag of Commodore Dupré, their naval commandant in the Indian Ocean, as well as plenipotentiary for the French Government in the disputes then pending concerning the Lambert Treaty. I was relieved to find that everything seemed peaceful and quiet at Tamatave, and that the long white flag bearing the name of Queen Ràsohèrina, in scarlet letters, still floated from the fort at the southern end of the town. I had been told at Port Louis that things were very unsettled in Madagascar, and that I should probably find Tamatave being bombarded by the French ; but it is unnecessary to refer further to what is now ancient history, or to touch upon political matters, which lie quite outside the main purpose of this book.

Tamatave, as a village, has not a very inviting appearance from the sea, and man's handiwork had certainly not added much to the beauty of the landscape. Had it not been for the luxuriant vegetation of the pandanus, palms, and other tropical productions, nothing could have been less interesting than the

22 TAMATAVE AND FIRST IMPRESSIONS

native town, which possessed at that time few European residences and no buildings erected for religious worship.¹ Canoes, formed out of the trunk of a single tree, soon came off to our ship, but I was glad to dispense with the services of these unsafe-looking craft, and to accept a seat in the captain's boat. Half-an-hour after anchoring we were rowing towards the beach, and in a few minutes I leaped upon the sand, with a thankful heart that I had been permitted to tread the shores of Madagascar.

Proceeding up the main street—a sandy road bordered by enclosures containing the stores of a few European traders—we came to the house of the British Vice-Consul. Here I found Mr Samuel Procter, who was subsequently the head for many years of one of the chief trading houses in the island, and also Mr F. Plant, a gentleman employed by the authorities of the British Museum to collect specimens of natural history in the then almost unknown country. From them I learned that a missionary party which had preceded me from Mauritius had left only two days previously for the capital, and that Mr Plant had kindly undertaken to accompany me on the journey for the greater part of the distance to Antananarivo. At first we thought of setting off on that same evening, so as to overtake our friends, but finding that this would involve much fatigue, we finally decided to wait for two or three days and take more time to prepare for the novel experiences of a Madagascar journey. In a little while I was domiciled at Mr Procter's store, where I was hospitably entertained during my stay in Tamatave.

The afternoon of my first day on shore was occupied in seeing after the landing of my baggage. This was no easy or pleasant task; the long rolling swell from the ocean made the transfer of large wooden cases from the vessel to the canoes a matter requiring considerable dexterity. More than once I expected to be swamped, and that through the rolling of the ship the packages would be deposited at the bottom of the harbour. It was therefore with great satisfaction that I saw all my property landed safely on the beach.

Although Tamatave has always been the chief port on the east coast of Madagascar, there were, for many years after my arrival there, no facilities for landing or shipping goods. The bullocks, which formed the staple export, were swum off to the ships, tied by their horns to the sides of large canoes, and then

slung on board by tackles from the yard-arm. From the shouting and cries of the native drovers, the struggles of the oxen, and their starting back from the water, it was often a very exciting scene. A number of these bullockers were always passing between the eastern ports of Madagascar and the islands of Mauritius and Réunion, and kept the markets of these places supplied with beef at moderate rates. The vessels generally ceased running for about four months in the early part of the year, when hurricanes are prevalent in the Indian Ocean; and it may easily be supposed that the passenger accommodation on board these ships was not of the first order. However, compared with the discomforts and, often, the danger and long delays endured by some, I had not much to complain of in my first voyage to Madagascar. It had, at least, the negative merit of not lasting long, and I had not then the presence of nearly three hundred oxen as fellow-passengers for about a fortnight, as on my voyage homewards, when I had also a severe attack of malarial fever.

The native houses of Tamatave, like those of the other coast villages, were of very slight construction, being formed of a framework of wood and bamboo, filled in with leaves of the pandanus and the traveller's tree. In a few of these some attempts at neatness were observable, the walls being lined with coarse cloth made of the fibre of *rofia*-palm leaves, and the floor covered with well-made mats of papyrus. But the general aspect of the native quarter of the town was filthy and repulsive; heaps of putrefying refuse exhaled odours which warned one to get away as soon as possible. In almost every other house a large rum-barrel, ready tapped, showed what an unrestricted trade was doing to demoralise the people.

I could not help noticing the strange articles of food exposed for sale in the little market of the Bétsimisàraka quarter. Great heaps of brown locusts seemed anything but inviting, nor were the numbers of minute fresh-water shrimps much more tempting in appearance. With these, however, were plentiful supplies of manioc-root, rice of several kinds, potatoes and many other vegetables, the brilliant scarlet pods of different spices, and many varieties of fruit—pine-apples, bananas, melons, peaches, citrons and oranges. Beef was cheap as well as good, and there was a lean kind of mutton, but it was much like goat-flesh.

Great quantities of poultry are reared in the interior and are brought down to the coast for sale to the ships trading at the ports.

The houses of the Malagasy officials and the principal foreign traders were substantially built of wooden framework, with walls and floors of planking and thatched with the large leaves of the traveller's tree. No stone can be procured near Tamatave, nor can bricks be made there, as the soil is almost entirely sand ; the town itself is indeed built on a peninsula, a sandbank thrown up by the sea, under the shelter of the coral reefs which form the harbour. The house where I was staying consisted of a single long room, with the roof open to the ridge ; a small sleeping apartment was formed at one corner by a partition of *rofia* cloth. There was no window, but light and air were admitted by large doors, which were always open during the day. A few folds of Manchester cottons, to serve as mattress, and a roll of the same for a pillow, laid on Mr Procter's counter, formed a luxurious bed after the discomforts of a bullock vessel. All around us, in the native houses, singing and rude music, with drumming and clapping of hands, were kept up far into the night ; and these sounds, as well as the regular beating of the waves all round the harbour, and the excitement of the new and strange scenes of the past day, kept me from sleep until the small hours of the morning.

The following day I went to make a visit to the Governor of Tamatave, as a new arrival in the country. My host accompanied me, as I was of course quite unable to talk Malagasy. As this was a visit of ceremony, it was not considered proper to walk, so we went by the usual conveyance of the country, the *filanjàna*. This word means anything by which articles or persons are carried on the shoulder, and is usually translated "palanquin," but the *filanjàna* is a very different thing from the little portable room which is used in India. In our case it was a large easy-chair, attached to two poles, and carried by four stout men, or *màromita*, as they are called. They carried us at a quick trot ; but this novel experience struck me—I can hardly now understand why—as irresistibly ludicrous, and I could not restrain my laughter at the comical figure—as it then seemed to me—that we presented, especially when I thought of the sensation we should make in the streets of an English town.

The motion was not unpleasant, as the men keep step together. Every few minutes they change the poles from one shoulder to the other, lifting them over their heads without any slackening of speed.

A few minutes brought us to the fort, at the southern end of the town; this was a circular structure of stone, with walls about twenty feet high, which were pierced with openings for about a dozen cannon. We had to wait for a few minutes until the Governor was informed of our arrival, and thus had time to think of the scene this fort presented not twenty years before that time, when the heads of many English and French sailors were fixed on poles around the fort. These ghastly objects were relics of those who were killed in an attack made upon Tamatave in 1845, by a combined English and French force, to redress some grievances of the foreign traders. But we need not be too hard on the Malagasy when we remember that, not a hundred years before that time, we in England followed the same delectable custom, and adorned Temple Bar and other places with the heads of traitors.

Presently we were informed that the Governor was ready to receive us. Passing through the low covered way cut through the wall, we came into the open interior space of the fort. The Governor's house, a long low wooden structure, was opposite to us; while, on the right, he was seated under the shade of a large tree, with a number of his officers and attendants squatting around him. They were mostly dressed in a mixture of European and native costume—viz. a shirt and trousers, over which were thrown the folds of the native *lamba*, an oblong piece of calico or print, wrapped round the body, with one end thrown over the left shoulder. Neat straw hats of native manufacture completed their costume. The Governor, whose name was Andriamandròso, was dressed in English fashion, with black silk "top hat" and worked-wool slippers. He had a very European-looking face, dark olive complexion, and was an *andriana*—that is, one of a clan or tribe of the native nobility. He did not speak English, but through Mr Procter we exchanged a few compliments and inquiries. I assured him of the interest the people of England took in Madagascar, and their wish to see the country advancing. Presently wine was brought, and after drinking to the Governor's health we took our

leave. The Hova government maintained, until the French conquest, a garrison of from two to three hundred men at Tamatave. These troops had their quarters close to the fort, in a number of houses placed in rows and enclosed in a large square or *rôva*, formed of strong wooden palisades, with gateways.

The following day was occupied in making preparations for the journey, purchasing a few of the most necessary articles of crockery, etc., and unpacking my canteen. This latter was a handsome teak box, and fitted up most neatly with plates, dishes, knives and forks, etc. But Mr Plant said that both the box and most of its contents were far too good to be exposed to the rough usage they would undergo on the journey; so I took out some of the things and repacked the box in its wooden case. Subsequent experiences showed the wisdom of this advice, and that it was a mistake to use too expensive articles for such travelling as that in Madagascar, or to have to spend much time in getting out and putting in again everything in its proper corner. Upon reaching the halting-place after a fatiguing journey of several hours, it is a great convenience to get at one's belongings with the least possible amount of exertion; and when starting before sunrise in the mornings, it is not less pleasant to be able to dispense with an elaborate fitting of things into a canteen. By my friend's advice, I therefore bought a three-legged iron pot for cooking fowls, some common plates, and a tin coffee-pot, which also served as a teapot when divested of its percolator. These things were stowed away in a mat bag, which proved the most convenient form of canteen possible for such a journey. The contents were quickly put in, and as readily got out when wanted; and, thus provided, we felt prepared to explore Madagascar from north to south, quite independent of inns and innkeepers, chambermaids and waiters, had such members of society existed in this primitive country.

¹ It is perhaps hardly necessary to say that for some years past Tamatave has been a very different place from what is described above. Many handsome buildings—offices, banks, shops, hotels and government offices—have been erected; the town is lighted at night by electricity; piers have been constructed; and in the suburbs shady walks and roads are bordered by comfortable villa residences and their luxuriant gardens.

CHAPTER III

FROM COAST TO CAPITAL : ALONG THE SEASHORE

TRAVELLING in Madagascar fifty years ago, and indeed for many years after that date, differed considerably from what we have any experience of in Europe. It was not until the year 1901 that a railway was commenced from the east coast to the interior, and it is only a few months ago that direct communication by rail has been completed between Tamatave and Antananarivo. But until the French occupation, in 1895, a road, in our sense of the word, did not exist in the island ; and all kinds of merchandise brought from the coast to the interior, or taken between other places, were carried for great distances on men's shoulders. There were but three modes of conveyance—viz. one's own legs, the *lākana* or canoe, and the *filanjāna* or palanquin. We intended to make use of all these means of getting over the ground (and water) ; but by far the greater part of the journey of two hundred and twenty miles would be performed in the *filanjāna*, carried on the sinewy shoulders of our bearers or *màromita*. This was *the* conveyance of the country (and it is still used a good deal) ; for during the first thirty years and more of my residence in Madagascar there was not a single wheeled vehicle of any kind to be seen in the interior, nor did even a wheelbarrow come under my observation during that time.

This want of our European means of conveyance arose from the fact that no wheeled vehicles could have been used owing to the condition of the tracks then leading from one part of the country to another. The lightest carriage or the strongest waggon would have been equally impracticable in parts of the forest where the path was almost lost in the dense undergrowth, and where the trees barely left room for a palanquin to pass. Nor could any team take a vehicle up and down some of the tremendous gorges, by tracks which sometimes wind like a cork-

28 GENERAL FOREST AND GENERAL FEVER

screw amidst rocks and twisted roots of trees, sometimes climb broad surfaces of slippery basalt, where a false step would send bearers and palanquin together into steep ravines far below, and again are lost in sloughs of adhesive clay, in which the bearers at times sink to the waist, and when the traveller has to leap from the back of one man to another to reach firm standing-ground. Shaky bridges of primitive construction, often consisting of but a single tree trunk, were frequently the only means of crossing the streams ; while more often they had to be forded, one of the men going cautiously in advance to test the depth of the water. It occasionally happened that this pioneer suddenly disappeared, affording us and his companions a good deal of merriment at his expense. At times I have had to cross rivers when the water came up to the necks of the bearers, the shorter men having to jump up to get breath, while they had to hold the palanquin high up at arm's-length to keep me out of the water.

It was often asked : Why do not the native government improve the roads ? The neglect to do so was intentional on their part, for it was evident to everyone who travelled along the route from Tamatave to the capital that the track might have been very much improved at a comparatively small expense. The Malagasy shrewdly considered that the difficulty of the route to the interior would be a formidable obstacle to an invasion by a European power, and so they deliberately allowed the path to remain as rugged as it is by nature. The first Radàma is reported to have said, when told of the military genius of foreign soldiers, that he had two officers in his service, "General Hàzo," and "General Tazo" (that is, "Forest and Fever"), whom he would match against any European commander. Subsequent events so far justified his opinion that the French invasion of the interior in 1895 did not follow the east forest road, but the far easier route from the north-west coast. The old road through the double belt of forests would have presented formidable obstacles to the passage of disciplined troops, and at many points it might have been successfully contested by a small body of good marksmen, well acquainted with the localities.

It may be gathered from what has been already said that travelling in Madagascar in the old times had not a little of



ON THE COAST LAGOONS

Large dug-out canoes, propelled by paddles on each side, one man to each paddle

adventure and novelty connected with it. Provided the weather was moderately fine, there was enough of freshness and often of amusing incident to render the journey not unenjoyable, especially if travelling in a party; and even to a solitary traveller there is such a variety of scenery, and so many and beautiful forms of vegetation, to arrest the attention, that it was by no means monotonous. Of course there must be a capacity for "roughing it," and for turning the very discomforts into sources of amusement. We must not be too much disturbed at a superabundance of fleas or mosquitoes in the houses, nor be frightened out of sleep by the scampering of rats around and occasionally even upon us. It sometimes happens, too, that a centipede or a scorpion has to be dislodged from under the mats upon which we are about to lay our mattresses, but, after all, a moderate amount of caution will prevent us taking much harm.

It must be confessed, however, that if the weather prove unfavourable the discomforts are great, and it requires a resolute effort to look at the bright side of things. To travel for several hours in the rain, with the bearers slipping about in the stiff adhesive clay—now sinking to the knees in a slough in the hollows, and then painfully toiling up the rugged ascents—with a chance of being benighted in the middle of the forest, were not enjoyable incidents in the journey. Added to this, occasionally the bearers of baggage and bedding and food would be far behind, and sometimes would not turn up at all, leaving us to go supperless, not to bed, but to do as well as we could on a dirty mat. But, after all said and done, I can look back on many journeys with great pleasure; and my wife and I have even said to each other at the end, "It has been like a prolonged picnic." And by travelling at the proper time of the year—for we never used, if possible, to take long journeys in the rainy season—and with ordinary care in arranging the different stages, there was often no more discomfort than that inseparable from the unavoidable fatigue.

Soon after breakfast on the morning of the 3rd October the yard of Mr Procter's house was filled with the bearers waiting to take their packages, and, as more came than were actually required, there was a good deal of noise and confusion until all the loads had been apportioned. Most of my *màromita* were

strong and active young men, spare and lithe of limb, and proved to possess great powers of endurance. The loads they carried were not very heavy, but it was astonishing to see with what steady patience they bore them hour after hour under a burning sun, and up and down paths in the forest, where their progress was often but a scrambling from one foothold to another. Two men would take a load of between eighty and ninety pounds, slung on a bamboo, between them ; and this was the most economical way of taking goods, for, on account of the difficulty of the paths, four men found it more fatiguing to carry in one package a weight which, divided into two, could easily be borne by two sets of bearers.

Eight of the strongest and most active young men, accustomed to work together, were selected to carry my palanquin, and took it in two sets of four each, carrying alternately. Most of the articles of my baggage were carried by two men ; but my two large flat wooden cases, containing drawing boards, paper and instruments, required four men each. All baggage was carried by the same men throughout the journey, without any relay or change, except shifting the pole from one shoulder to the other ; but my palanquin, as already said, had a double set. The personal bearers, therefore, naturally travel quicker than those carrying the baggage, and we generally arrived at the halting-places an hour or more before the others came up. The hollow of the bamboos to which boxes and cases were slung served for carrying salt, spoons, and various little properties of the bearers, and sometimes small articles of European make for selling at the capital. The men were, and still are, very expert in packing and securing goods committed to their charge. Prints, calicoes and similar materials were often covered with pandanus leaves and so made impervious to the wet ; and even sugar and salt were carried in the same way without damage.

As the conveyance of myself and my baggage required more than thirty men, and Mr Plant took a dozen in addition, it was some time before everything was arranged, and there was a good deal of contention as to getting the lightest and most convenient packages to carry. We had hoped to start early in the forenoon, but it was after one o'clock when we sent off the last cases and I stepped into my *filanjàna* to commence the novel experience of a journey in Madagascar. We formed quite a large party as

we set off from Tamatave and turned southwards into the open country. The rear was brought up by a bearer of some intelligence and experience, who only carried a spear, and was to act as captain over the rest and look out accommodation for us in the villages, etc. He had also to see after the whole of the luggage, and take care that everyone had his proper load and came up to time.

My *filanjàna* was a different kind of thing from the chair in which I had gone to visit the Governor. It was of the same description as that commonly used by Malagasy ladies—made of an oblong framework of light wood, filled in with a plaited material formed of strips of sheepskin, and carried on poles, which were the midrib of the enormous leaves of the *rofia*-palm. In this I sat, legs stretched out at full length, a piece of board fixed as a rest for the back, and the whole made fairly comfortable by means of cushions and rugs. There was plenty of space for extra wraps, waterproof coat, telescope, books, etc. When ladies travel any distance in this kind of *filanjàna* a hood of *rofia* cloth is fixed so as to draw over the head and to protect them from the sun and rain. In my case, a stout umbrella served instead, and a piece of waterproof cloth protected me fairly well from the little rain that fell on the journey. (I may add here that this was the first, and the last, journey I ever took in this kind of *filanjàna*. The late Dr Mullens, who also travelled up in a similar way in 1873, said it reminded him of a picture in *Punch*, of a heavy swell driving himself in a very small basket carriage, and being remarked on by a street arab to his companion thus : “Hallo, Bill, here’s a cove a-driving hisself home from the wash.” My companion’s *filanjàna* was a much simpler contrivance than mine, and consisted merely of two light poles held together by iron bars, and with a piece of untanned hide nailed to them for a seat. It was much more conveniently carried in the forest than my larger and more cumbrous conveyance. It may be added that certainly one was sometimes danced about “like a pea in a frying-pan” in this rude machine ; and it was not long before a much more comfortable style of *filanjàna* was adopted, with leather-covered back and arms, padded as well as the seat, and with foot-rest, and leather or cloth bags strapped to the side for carrying books and other small articles.

It was a fine warm day when we set off, the temperature not

being higher than that of ordinary summer weather in England. Our course lay due south, at no great distance from the sea, the roar of whose waves we could hear distinctly all through the first stage of the journey. In proceeding from Tamatave to Antananarivo the road did not (and still does not, by railway) lead immediately into the interior, but follows the coast for about fifty miles southward. Upon reaching Andôvorànto, we had to leave the sea and strike westward into the heart of the island, ascending the river Ihàroka for nearly twenty miles before climbing the line of mountains which form the edge of the interior highland, and crossing the great forest.

We soon left Tamatave behind us and got out into the open country, a portion of the plain which extends for about thirty miles between the foothills and the sea. Our men took us this first day's journey of nine or ten miles at a quick walk or trot for the whole way, without any apparent fatigue. The road—which was a mere footpath, or rather several footpaths, over a grassy undulating plain—was bounded on one side by trees, and on the other by low bushes and shrubs. Besides the coconut-palms and the broad-leaved bananas, which were not here very numerous, the most striking trees to a foreigner were the agave, with long spear-shaped prickly leaves, on a high trunk, and another very similar in form, but without any stem, both of which might be counted by thousands. Nearer the sea was an almost unbroken line of pandanus, which is one of the most characteristic features of the coast vegetation. I also noticed numbers of orchids on the trees, of two or three species of *Angræcum*, but just past the flowering; a smaller orchid, also with pure white flowers, was very abundant.

I had enough to engage my attention with these new forms of vegetation, as well as in noticing the birds, and the many butterflies and other insects which crossed our path every moment, until we arrived at Hivòndrona, a large straggling village on a broad river of the same name, which here unites with other streams and flows into the sea. Among the many birds to be seen were flocks of small green and white paroquets, green pigeons, scarlet cardinal-birds, and occasionally beautiful little sun-birds (*Nectarinidæ*) with metallic colours of green, brown and yellow. We had intended to go farther, but finding that, owing to our late starting, we should not reach another village before



A FOREST ROAD

Two bearers carrying an empty palanquin, and one with luggage
There is the usual forest vegetation

dark, we decided to stay of Hivòndrona for the night. A house at most of the villages on the road to the capital was provided for travellers, who took possession at once, without paying anything for its use. The house here, which was somewhat better than at most of the other places, consisted, like all the dwellings in this part of the country, of a framework of poles, thatched with the leaves of the traveller's tree, and the walls filled in with a kind of lathing made of the stalks of the same leaves. The walls and floor were both covered with matting, made from the fibre of leaves of the *rofia* palm. In one corner was the fire-place, merely a yard and a half square of sand and earth, with half-a-dozen large stones for supporting the cooking utensils. As in most native houses, the smoke made its way out through the thatch.

Our men soon came up with the baggage and proceeded to get out kitchen apparatus, make a fire, and put on pots and pans ; and in a short time beef, fowls and soup were being prepared. Meanwhile Mr Plant and I walked down to the seashore and then into the village, to call upon a creole trader, who was the only European resident in the place. We brought him back with us, and found dinner all ready on our return to the house. My largest case of drawing boards formed, when turned upside down and laid on other boxes, an excellent table ; we sat round on other packages, and found that one of our bearers, who officiated as cook, was capable of preparing a very fair meal ; and although the surroundings were decidedly primitive, we enjoyed it all the more from its novelty. After our visitor had left us we prepared to sleep ; three or four boxes, with a rug and my clothes-bag, formed a comfortable bed for myself, while Mr Plant lay on the floor, but found certain minute occupants of the house so very active that his sleep was considerably disturbed.

Next morning we were up long before daybreak, and after a cup of coffee started a little before six o'clock. We walked down to the river, which had to be crossed and descended for some distance, and embarked with our baggage in seven canoes. These canoes, like those at Tamatave, are somewhat rude contrivances, and are hollowed out of a single tree. They are of various lengths, from ten to thirty or forty feet, the largest being about four feet in breadth and depth. There is no keel, so that they are rather apt to capsize unless carefully handled

and loaded. At each end is a kind of projecting beak, pierced with a hole for attaching a mooring-rope. From the smoothness of the sides, and the great length compared with the beam, they can be propelled at considerable speed with far less exertion than is required to move a boat of European build. Instead of oars, paddles shaped like a wooden shovel are employed, and these are dug into the water, the rower squatting in the canoe and facing the bows; the paddle is held vertically, a reverse motion being given to the handle. We went a couple of miles down the stream, which here unites with others, so that several islands are formed, all the banks being covered with luxuriant vegetation. Conspicuous amongst this, and growing in the shallow water close to the banks, were great numbers of a gigantic arum endemic in Madagascar (*Typhonodorum lindleyanum*),¹ and growing to the height sometimes of twelve or fifteen feet, and possessing a large white spathe of more than a foot in length, enclosing a golden-yellow pistil, or what looks like one. The leaves are most handsome and are about a yard long. After about twenty minutes' paddling we landed, and, when all our little fleet had arrived, mounted our palanquins, and set off through a narrow path in the woods. The morning air, even on this tropical coast, was quite keen, making an overcoat necessary before the sun got up.

Our road for some miles lay along cleared forest, with stumps of trees and charred trunks, white and black, in every direction. It is believed that the white ants are responsible for this destruction of the trees. We saw numbers of a large crow (*Corvus scapulatus*), not entirely black, like our English species, but with a broad white ring round the neck and a pure white breast, giving them quite a clerical air. This bird, called *goàika* by the Malagasy—evidently an imitation of his harsh croak—is larger than a magpie, and his dark plumage is glossy bluish-black. He is very common everywhere in the island, being often seen in large numbers, especially near the markets, where he picks up a living from the refuse and the scattered rice. He is a bold and rather impudent bird, and will often attack the smaller hawks. There were also numbers of the white egret (*Ardea bubulcus*) or *vòrom-pòtsy* (i.e. "white bird"), also called *vòrontàn-òmbly* (i.e. "bird liked by cattle"), from their following the herds to feed upon the ticks which torment them. One may

often see these egrets perched on the back of the oxen and thus clearing them from their enemies. Wherever the animals were feeding, these birds might be seen in numbers proportionate to those of the cattle. This egret has the purest white plumage, with a pale yellow plume or crest, and is a most elegant and graceful bird.

The oxen of Madagascar have very long horns, and a large hump between the shoulders. In other respects their appearance does not differ from the European kinds, and the quality and flavour of the flesh is not much inferior to English beef. The hump, which consists of a marrow-like fat, is considered a great delicacy by the Malagasy, and when salted and eaten cold is a very acceptable dish. When the animal is in poor condition the hump is much diminished in size, being, like that of the camel in similar circumstances, apparently absorbed into the system. It then droops partly over the shoulders. These Malagasy oxen have doubtless been brought at a rather remote period from Africa; their native name, *òmby*, is practically the same as the Swahili *ngombe*.

We reached Trànômàro ("many houses") at half-past nine, and there breakfasted. My bearers proved to be a set of most merry, good-tempered, willing fellows. As soon as they got near the halting-places they would set off at a quick run, and with shouts and cries carry me into the village in grand style, making quite a commotion in the place. Leaving again at noon, in a few minutes we came down to the sea, the path being close to the waves which were rolling in from the broad expanse of the Indian Ocean. I was amused by the hundreds of little red crabs, about three inches long, taking their morning bath or watching at the mouth of their holes, down which they dived instantaneously at our approach. One or more species of the Madagascar crabs has one of its pincers enormously enlarged, so that it is about the same size as the carapace, while the other claw is quite rudimentary. This great arm the little creature carries held up in a ludicrous, threatening manner, as if defying all enemies. I was disappointed in not seeing shells of any size or beauty on the sands. The only ones I then observed which differed from those found on our own shores were a small bivalve of a bluish-purple hue, and an almost transparent whorled shell, resembling the volute of an Ionic

capital, but so fragile that it was difficult to find a perfect specimen.

But although that portion of the shore did not yield much of conchological interest, there are many parts of the coasts of Madagascar which produce some of the most beautifully marked species of the genus *Conus* (*Conus tessellatus* and *C. nobilis*, if I am not mistaken, are Madagascar species), while large handsome species of the *Triton* (*T. variegatum*) are also found. These latter are often employed instead of church bells to call the congregations together, as well as to summon the people to hear Government orders. A hole is pierced on the side of the shell, and it requires some dexterity to blow it; but the sound is deep and sonorous and can be heard at a considerable distance. The circular tops of the cone shells are ground down to a thin plate and extensively used by the Sàkalàva and other tribes as a face ornament, being fixed by a cord on the forehead or the temples. They are called *jélana*. I have also picked up specimens, farther south, of *Cypræa* (*C. madagascariensis*), a well-known handsome shell, as well as of *Oliva*, *Mitra*, *Cassis*, and others (*C. madagascariensis*). The finest examples are, however, I believe, only to be got by dredging near the shore.

After some time we left the shore and proceeded through the woods, skirting one of those lagoons which run parallel with the coast nearly all the way from Tamatave to Andòvorànto. A good recent map of Madagascar will show that on this coast, for about three hundred miles south of Hivòndrona, there is a nearly continuous line of lakes and lagoons. They vary in distance from the sea from a hundred yards to a couple of miles; and in many places they look like a very straight river or a broad canal, while frequently they extend inland, spreading out into extensive sheets of water, two or three miles across. This peculiar formation is probably owing, in part at least, to slight changes of level in the land, so that the inner banks of the lagoons were possibly an old shore-line. But this chain of lagoons and lakes is no doubt chiefly due to east coast rivers being continually blocked up at their outlets by bars of sand, driven up by the prevailing south-east trade-wind and the southerly currents. So that the river waters are forced back into the lagoons until the pressure is so great that a breach is made, and the fresh water rushes through into the sea. On

account of these sand-bars, hardly any east coast river can be entered by ships. The rivers, in fact, flow for the most of the time, not into the sea, but into the lagoons. These are not perfectly continuous, although out of that three hundred miles there are only about thirty miles where there are breaks in their continuity and where canoes have to be hauled for a few hundred yards, or for a mile or two, on the dry land separating them.

It will at once occur to anyone travelling along this coast, as we did, that an uninterrupted waterway might be formed by cutting a few short canals to connect the separate lagoons, and so bring the coast towns into communication with Tamatave. That enlightened monarch, Radàma I. (1810-1828), did see this, and several thousand men were at one time employed in connecting the lagoons nearest Tamatave; but this work was interrupted by his death and never resumed by his successors. But soon after the French conquest the work was again taken in hand; canals were excavated, connecting all the lakes and lagoons between Tamatave and Andòvorànto; and for about twelve years a service of small steamers took passengers and goods between Hivòndrona and Brickaville, where, until quite recently, the railway commenced. Since the line of rails has now been completed direct to Tamatave, this waterway will not be of the same use, at least for passenger traffic.

The scenery of this coast is of a very varied and beautiful nature, and the combinations of wood and water present a series of pictures which constantly recalled some of the loveliest landscapes that English river and lake scenery can present. Our route ran for most of the way between the lagoons and the sea, among the woods. On the one hand we had frequent glimpses through the trees of sheets of smooth water fringed by tropical vegetation, and on the other hand were the tumbling and foaming waves of the ever-restless sea. In many places islands studded the surface of the lakes, and I noticed thousands of a species of pandanus, with large aerial roots, spreading out as if to anchor it firmly against floods and violent currents. In the woods were the gum-copal tree and many kinds of palms with slender graceful stems and crowns of feathery leaves. The climbing plants were abundant, forming ropes of various thicknesses, crossing from tree to tree and binding all together in inextricable confusion, creeping on the ground, mounting to

the tree-tops and sometimes hanging in coils like huge serpents. Great masses of hartstongue fern occurred in the forks of the branches, and wherever a tree trunk crossed over our path it was covered with orchids.

Among other trees I recognised the celebrated tangèna, from which was obtained the poison used in Madagascar from a remote period as an ordeal. The tangèna is about the size of an ordinary apple-tree, and, could it be naturalised in England, would make a beautiful addition to our ornamental plantations. The leaves are peculiarly grouped together in clusters and are somewhat like those of the horse-chestnut. The poison was procured from the kernel of the fruit, and until the reign of Radàma II. (1861) was used with fatal effect for the trial of accused persons, and caused the death of thousands of people, mostly innocent, every year during the reign of the cruel Rànavałona I.

We arrived at Andrànokòditra, a small village with a dozen houses, early in the afternoon. From our house there was a lovely view of the broad lake with its woods and islands, while the sea was only two or three hundred yards' distance in the rear. Wild ducks and geese of several kinds were here very plentiful, but my friend was not very successful with his gun, as a canoe was necessary to reach the islands where they chiefly make their haunts. After our evening meal Mr Plant slung his hammock to the framework of our hut, and happily did not come to grief, as occasionally happened. I was somewhat disturbed by the cockroaches, which persisted in dropping from the roof upon and around me. There was no remedy, however, except to forget the annoyance in sleep.

I may here notice that when travelling along this coast a few years later (in August 1883) the sands were everywhere almost covered with pieces of pumice, varying from lumps as big as one's head to pieces as small as a walnut. They were rounded by the action of the waves, and on some of the larger pieces oysters, serpulæ and corals had begun to form. This pumice had no doubt been brought by the ocean currents, as well as by the winds, both setting to the west, from the Straits of Sunda, where they were ejected by the tremendous eruption of Krakatoa, off the west coast of Java, during the previous May. This fact supplies not only an interesting illustration of the

distances to which volcanic products may be carried by ocean currents, but also throws light upon the way in which the ancestors of the Malagasy came across the three thousand miles of sea which separate Madagascar from Malaysia. It is easy to understand how, in prehistoric times, single *prahus*, or even a small fleet of them, were occasionally driven westward by a hurricane, and that the westerly current aided in this, until at length these vessels were stranded or gained shelter on the coast of Madagascar, stretching north and south, as it does, for a thousand miles. From what I have been told, the pumice was found, if not everywhere on the east coast, at any rate over a considerable extent of it.

We were up soon after four o'clock on the following morning, and started while it was still twilight. After going a short distance through the woods we came again to the seashore, and proceeded for some miles close to the waves, which broke repeatedly over our bearers' feet as they tramped on the firm wet sand. For a considerable distance there was only a low bank of sand between the salt water of the ocean and the fresh water of the lake. In many places the opposite shore showed good sections of the strata, apparently a red sandstone, with a good deal of quartz rock. We left the sea again and went on through the woods, a sharp shower coming on as we entered them. We did not notice any fish in the lagoons, but I was afterwards informed by a correspondent, Mr J. G. Connorton, who lived for several years at Mānanjāra, and paid much attention to natural history, that there is a great variety of fish, crustaceans and mulluscs in the lagoons and rivers, as well as in the sea. He kindly sent me a list of about one hundred and twenty of these, together with many interesting particulars as to their habits and appearance, etc. From this account I will give a few extracts :

“*Ambàtovàzana*, a sea-fish which comes also into the entrance of the rivers ; it has silvery scales and yellow fins. In both upper and lower jaws are four rows of teeth very like pebbles ; these are for crushing crabs, its usual food. Its name is derived from its peculiarly shaped teeth (*vàto*, stone ; *vàzana*, molar teeth). *Botàla*, a small sea and river fish ; it is covered all over with rough prickles. These fish inflate their bodies by filling their stomachs with air as soon as they are taken out of the

water ; if replaced in the water suddenly, out goes the air, and they are off like a flash. It is probably *Tetrodon fàhaka*. *Hintana*, a river-fish, with purple colouring and darker purple stripes from back to belly. It is generally found among weeds, and has four long spines, one on the dorsal fin, two just behind the gills, and one close under the tail. These spines are very poisonous, and anyone pricked by them suffers great pain for several hours, the parts near the wound swelling enormously. I have not, however, heard of the wound ever proving fatal. *Horita*, a small species of octopus found clinging to the rocks. The Malagasy esteem them highly, but I found them gluey and sticky in the mouth, as well as rank in flavour. *Tòfoka*, a sea and river fish, probably *Mugil borbonicus*. It has a habit of jumping out of the water, and if chased by a shark it swims at the surface with great rapidity, making enormous leaps into the air every now and then and often doubling upon the enemy. Perhaps the best of the many edible fish is the *Zòmpona*, a kind of mullet, only feeding on soft substances such as weeds. It is silvery in colour, with large scales, and is probably the best-known fish on the east coast. When fresh from the sea, its tail and fins have a yellowish tinge, and it is then splendid eating ; but if this tinging is lost it shows that the fish has been for some time in fresh water, and the flesh has a muddy flavour. It varies in size from nine to thirty inches long. The coast people are very fond of *zòmpona* ; and when a person is dying and is so far gone that the case is a hopeless one, some outsider is almost sure to say, ‘ He (or she) won’t get *zòmpona* again.’ ”

I can confirm my correspondent’s statements as to the excellence of the last-named fish, having frequently eaten it when on the coast. He also mentions several kinds of prawns and shrimps ; some of these are large and make an excellent curry. One species of prawn, called *Oronkosia*, is long and slender, with immense antennæ, often a foot in length. One species of shrimp has one large claw, like the crab already mentioned, the other being hardly at all developed. Several species of shark are seen off this coast, among them that extraordinary-looking fish, the hammer-headed shark (*Zygæna malleus*), which I have never seen in Madagascar waters, but have noticed with great interest in South African harbours. “The saw-fish (*Pristis sp.*), called by the natives *Vavàno*,

sometimes comes into the rivers in search of food. One was caught in the river Mānanjāra which measured fourteen feet from tip of saw to end of tail ; the saw alone was three feet six inches in length, seven inches broad at base, and four inches at tip. The flesh is coarse eating, but the liver is very palatable."

I may remark here that we seldom stopped, either at mid-day or in the evening, at any village without a visit from the headman of the place and his family, who always carried some present. Fowls, rice, potatoes, eggs and honey were constantly brought to us, preceded by a speech in which the names and honours of the Queen were recited, and compliments to us on our visiting their village. The Malagasy are a most hospitable people, always courteous and polite to strangers ; and my first experience of them on this journey was confirmed in numberless instances in travelling in other parts of the country.

Leaving Vavòny, where we had our morning repast, between eleven and twelve o'clock, we went on again through the woods along the shores of the lake, which here spreads out into broad sheets of water, two or three miles wide. The scenery was delightful, both shores being thickly wooded, reminding me in some places of the Wye, in others of the lake at Longleat, and in narrow parts of Studley Park. Our road for miles resembled a footpath through a nobleman's park in England : clumps of trees, shrubberies, and short smooth turf, all united to complete the resemblance. These all seemed more like the work of some expert landscape gardener than merely the natural growth. In some parts, where the more distinctly tropical vegetation—pandanus, cacti and palms—were not seen, the illusion was complete. In many places we saw many sago palms (*Cycas thouarsii*), a tree much less in height than the majority of the palms and not exceeding twelve or fourteen feet, but with the same long pinnate leaves characteristic of so many of the Palmaceæ.

One of the most conspicuous trees on this coast, especially as seen from the sea, is the *Filao* (*Casuarina equisetifolia*), a tall larch or fir-like tree, often called, from the colour of its wood, "the beefwood tree." Like the firs, its leaves are fine filaments, and the wind passing through these produces a peculiar gentle sighing noise. Very plentiful, too, is a much smaller tree bearing

a perfectly globular-shaped fruit as large as a good-sized orange, but having a hard shell which requires a smart blow to crack. It contains a greyish pulp, and a number of large black seeds ; and although by no means equal to an orange in taste, its acid flavour was refreshing enough where one was thirsty and heated with the midday sun. A friend of mine remarks : " As they are rather more difficult to eat in a cleanly and dainty fashion than ripe mangoes, we smeared ourselves pretty considerably in the process." While the pulp is edible, the seeds are poisonous, and we need not wonder at that when we find that the tree is closely allied to the *Strychnos nux-vomica*. Its native name is *Vòavòtaka* (*Brehmia spinosa*) ; *vòà* is the general word for " fruit," and enters into the composition of more than two hundred Malagasy names of trees, plants and fruits. A species of *Hibiscus* is widely spread along the coast, and yields a valuable fibre. The natives say that its flowers are yellow in the morning and red in the evening. Other noticeable flowering shrubs here are a species of *Stephanotis*, with lovely large white flowers, and an *Ipomœa*, which straggles far and wide on the sand of the seashore. Along the sides of the lagoons and marshes in scattered places may be found the curious pitcher-plant (*Nepenthes madagascariensis*) ; this is a shrub about four feet high, whose jug-shaped pitchers, four to five inches in length, contain abundant water and numerous insects. Gum-copal is obtained from a tree (*Trachylobium verrucosa*) growing on this coast ; and india-rubber from several plants (*Landolphia madagascariensis* and *L. gummiifera*), creepers as well as trees.

Notwithstanding the beauty of this part of the country, it is very unhealthy for foreigners. The rivers, as we have seen, all communicate with the lagoons, and during the rainy season great quantities of decaying matter are brought down from the forests. The large extent of marsh and stagnant water in the lakes breed millions of mosquitoes, and so give rise to the dreaded malarial fever. The earlier accounts of the French and Portuguese settlements on the coast of Madagascar represent this as a frightful scourge, sweeping off a large proportion of the soldiers and settlers at their forts. From this, the Isle Ste Marie was called the " Grave of the French," and " the Churchyard " and " Dead Island " of the Dutch. But the use of quinine and modern precautions against mosquito bites have done much to

mitigate the attacks of fever, and since the draining of the marshes near Tamatave the town is said to be fairly healthy.

The Bètsimisàraka inhabitants of this coast are accustomed to place their dead in rude coffins hollowed out of the trunk of a tree and covered with a roof-shaped lid. But these are not buried, but are placed on the ground in little groups, in a sheltered grove of trees. In the case of wealthy people, the coffins are put on a kind of trestle, and sometimes are protected from the rain by having a shed fixed over them. This custom, it may be imagined, is not, for the living, a pleasant mode of disposing of the departed, and the presence of these little cemeteries may often be deduced from the effluvium, even if they are not seen. During the dry season one constantly meets with groups of people carrying up the remains of their relatives, Hova who have died on the coast, in order that they may be buried in their ancestral tombs. Sometimes we have had our midday meal, or have stopped for the night, in houses against whose outer walls these wrapped-up corpses, fastened to long poles for carriage, have been leaning. At one place where we stayed the people were making cakes for the funeral feast, and in pounding the rice for these the women made a special rhythmical beat of their pestles on the top of the rice mortar, as well as on the meal in the hollow of the mortar.

But to return to our journey. At about two o'clock we had to cross the lake, but as there was only one small canoe, it took more than two hours to get all our baggage and men over. We therefore strolled into the woods, finding plenty to interest us in examining the orchids, ferns, and other plants, most of them new to me. We captured a new and splendid spider, new to my companion, who had made entomology his special study. We were amused by the little land-crabs, with their curious stalked eyes, folding down into a case, when not raised to look about them. There were also many beautifully marked lizards, as well as other interesting living creatures in these tropical woods. The ferry was close to a village bearing the name of Andāvaka-mènaràna—that is, “hole of serpents.” Notwithstanding this ominous appellation, we were not startled from our path by even a solitary reptile, although a cave not far distant is said to be a lurking-place for numbers of these creatures. But on a subsequent journey along this coast I saw a large and

handsome brown serpent on the grass close to the path. I got down, not to kill it, but to examine its beautiful markings and graceful movements ; but on getting near it, which was not easy to do, as its movements were so rapid, it turned and faced me in a menacing fashion. Happily, although there are many species of serpents in Madagascar, not one is a venomous kind—that is, their bite is not fatal. At the same time there are some kinds which will bite severely if attacked. Later on, I saw another much smaller snake, of a bright green colour, on the trunk of a tree ; doubtless its tints were protective. The larger one I saw is called *Màndotra*, and was from three to four feet long ; another species found on the coast is called *Màntangòra*, and is a foot or more longer.

While on the subject of serpents, I will add here some particulars my friend, Mr Houlder, gives of yet another of these reptiles seen on this east coast, but farther north. This kind is called *Akòma* (*Pelophilus madagascariensis*), and appears to be a species of boa, killing fowls, rats and other creatures first by crushing them, and then covering them with saliva before swallowing. At a village he stayed in, my friend found the people much excited about a large serpent seen in their neighbourhood. Sending out his men to find it, “ at last the creature was seen. Yes, there he was, a villainous-looking monster, apparently asleep, coiled up among the bushes with his great flat head in the middle of the circle. The gun was loaded with several pistol bullets. Luckily it was, perhaps, for the duck-shot sent into him at the next discharge only just penetrated his thick scaly skin. Advancing to within a couple of yards or so, I raised the gun. Bang ! Away went the onlookers for their lives. Peering through the smoke which was slowly moving away, I could just see the head coming towards me. Enough, I bolted too. This caused a second stampede. But it was a groundless alarm. I looked back, and saw that the poor creature was incapable of doing serious injury. His back was hopelessly broken. No other shot was necessary.” Mr Houlder did not get the serpent to his house without difficulty, owing to the terror of the bearers even when it was dead. “ It was a medium-sized specimen, about nine feet long and as thick round the middle as the calf of a man’s leg. On each side of its body was a long yellow, black, and reddish chain-like

marking on a brown ground ; and near the extremity of its tail were two abortive claws. Muscular motion did not cease until long after it was dead."

Although we did not see any lemurs in the coast woods, one species at least is, or, at least, was, sometimes met with—viz. the white-fronted lemur (*Lemur mongos*, var. *albifrons*). Several specimens of this kind have been brought to England from time to time, and have been kept in the Regent's Park Zoological Gardens from as long ago as 1830 ; so that their appearance and habits are as well known to English people as to the Malagasy themselves. Their habits are simple enough. They often exhibit great vivacity, and are much given to leaping from one object to another, in which they are aided by the pad-like structure of the soles of their four hands. They are very good-natured and tame and full of fun while still young, but become cross and vicious when old. We shall, however, see and hear more of the lemurs when we come into the denser forests.

A little before dusk we arrived at Andòvorànto, a large village situated at the mouth of the river Ihàroka, and formerly the capital of the Bétsimisàraka tribe, before they were reduced to subjection by the Hova. This place would be the natural port of the capital, but for the bar of sand at the entrance of the river. Were it not for this obstruction, ships and steamers could come up into the interior for many miles. The house in which we stayed here was quite a large one, divided into three rooms, the walls covered with *rofia* matting, and actually possessing *windows* (but, of course, without glass) and doors. All the places where we had stayed previously had no windows, and a mat hung over the entrance supplied the place of a door.

While our dinner was being prepared we walked down to the sea and along the river banks, hoping to find some natural history specimens. During our walk Mr Plant related to me his success in obtaining a specimen of that remarkable creature, the aye-aye, an animal peculiar to Madagascar, and of which, at that time, only one or two specimens had reached Europe. The example he secured was sent to England in spirits, and from it, I believe, Sir Richard Owen prepared his monograph, giving full details and drawings, life size, showing its remarkable

structure. The animal, although apparently not scarce, is difficult to obtain, as it comes out from its retreat only at night ; besides which, the forest people have a superstitious fear of it, so that even a large reward is often insufficient to induce them to attempt its capture.

The aye-aye is included among the four-handed animals, but it is very unlike the monkeys, having a smaller brain and much less intelligence ; and from its powerful teeth it was at first thought to be a link between them and the rodentia, or gnawing animals. Its structure presents some of the most interesting illustrations of typical forms, being modified to serve special ends that any animal organisation can exemplify. The food of the aye-aye consists of a wood-boring larvæ, which tunnels into the wood of certain trees. To obtain these, the animal is furnished with most powerful chisel-shaped incisor teeth, with which it cuts away the outer bark. As, however, the grub retreats to the end of its hole, one of the fingers of the aye-aye's hands is slightly lengthened, but much diminished in thickness, and is finished with a hook-like claw. Thus provided, the finger is used as a probe, inserted in the tunnel, and the dainty morsel drawn forth from its hiding-place. There are also other modifications, all tending to the more perfect accomplishment of the purposes of its creation : the eyes being very large to see in the night, the ears widely expanded to catch the faint sound of the grub at work, and the thumbs of the feet largely developed so as to enable the animal to take a firm hold of the tree while using its teeth.

Since then, living specimens of the aye-aye have been sent to Europe, and careful observations were made for several months on the habits of one in the Regent's Park Gardens ; and other information has been obtained as to the animal as observed in its native forests by intelligent natives. The creature somewhat resembles a large cat in size, being about three feet in total length, of which its large bushy tail forms quite half. Its colour is dark brown, the throat being yellowish-grey ; a somewhat silvery look is given to the fur in certain lights by many whitish hairs on the back. The probe finger is used as a scoop when the aye-aye drinks ; it is carried so rapidly from the water to the mouth that the liquid seems to pass in a continual stream. A remarkable fact has been pointed out in the structure

of the lower jaw—namely, that the two sides are only joined together by a strong ligament, and do not, as in other animals, form one connected circle of bone. This accounts for the prodigious power of gnawing that the aye-aye possesses. It was seen to cut through a strip of tin-plate nailed to the door of its cage.

The aye-aye constructs true nests, about two and a half feet in diameter, which are found on trees in the dense parts of the forest. Near the coast these are composed of rolled-up leaves of the traveller's tree, and are lined with twigs and dry leaves. The opening of the nest is at the side, and a small white insect called *andaitra*, probably the larva of some beetle, forms the animal's chief food. It is said to be very savage, and strikes rapidly with its hands. The coast people believe it to be an embodiment of their forefathers, and so will not touch it, much less do it an injury; and if they attempted to entrap it, they think they would surely die in consequence; and their superstition extends even to its nest.

The aye-aye is one of the many instances which the animal life of Madagascar presents of isolation from other forms. It remains the only species of its genus, and, like many of the peculiar birds of the island, is one of the many proofs that Madagascar has for long ages been separated from Africa; so that while allied forms have become extinct on the continent, here, protected from the competition of stronger animals, many birds, mammals and insects have been preserved, and so this island is a kind of museum of ancient and elsewhere unknown forms of life.

CHAPTER IV

FROM COAST TO CAPITAL : ANDÒVORÀNTO TO MID-FOREST

IT rained heavily during the night of Tuesday and nearly until daybreak, so it was half-past six o'clock before we were able to leave Andòvorànto. Hitherto we had followed the seashore southwards ; now we were to start westwards into the interior. After an immense deal of shouting and some quarrelling on the part of our bearers, who seemed to think it necessary for everyone to give his opinion at the same moment, we pushed off in six large canoes and paddled away up the river Ihàroka. For several miles the stream is upwards of a mile in width. It was a fine calm morning after a stormy night, and as we glided rapidly over the broad smooth expanse of water, and turned our canoe's prow towards the interior mountains, I began really to feel that I was on my way to the capital.

After half-an-hour we came to a point where the river is a junction of three streams, the one we took being about half the width of the main current. We passed many canoes and overtook others ; some of these were filled with rice and other produce, and had but a single rower ; he sat generally at the stern and gave a few strokes with the paddle on each side of the canoe alternately, so as to keep the craft in a fairly straight course through the water. Other canoes were filled with what was evidently a family party, going together to some market held in one of the neighbouring villages. Our men seemed to enjoy the exercise of paddling, which was a change from bearing our palanquins and baggage on their shoulders, and they took us up the stream at a great speed. More than once, indeed, I wished they had been less vigorous, for they commenced racing with the other crews, making me not a little apprehensive of being upset. It would not have mattered much to them, as they swam fearlessly and had nothing to lose ; but it would have been unpleasant and dangerous for us, even apart from

the risk of crocodiles, which abound in most of the rivers of Madagascar.

These reptiles are so numerous in many parts as to be a great pest; they often carry off sheep and cattle, and not unfrequently women and children who incautiously go into or even near the water. The Malagasy, however, have a superstitious dread of these monsters, which prevents them from attempting to kill them. They rather try to propitiate the creature by prayers and offerings thrown into the water, and by acknowledging its supremacy in its own element. At Itàsy, a lake fifty miles west of the capital, the people believe that if a crocodile be killed a human life will, within a very short time, be exacted by the animal's brother reptiles, as an atonement for his death. Two or three French travellers once shot a crocodile in this lake, and such was the people's consternation and dread of the consequences that their visitors found it expedient to quit the neighbourhood as quickly as possible. The eggs of the crocodile are collected and sold for food in the markets, and are said to be perfectly good, but I confess I never brought myself to test their merits.

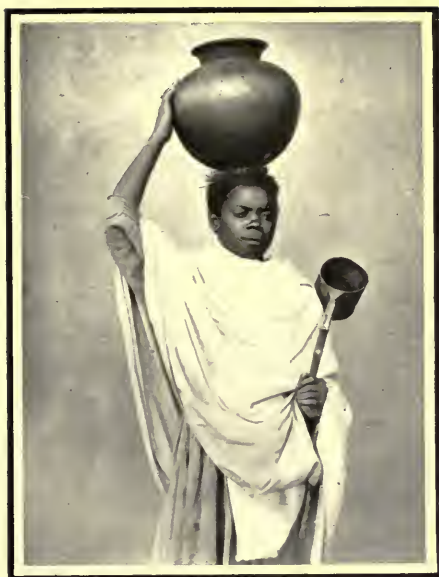
We kept near the banks of the river, and so were able to examine and admire the luxuriant vegetation with which they were covered. In many places the bamboo is conspicuous, with its long-jointed, tapering stem, and its whorls of minute leaves, of a light delicate green; but it is small here compared with what we afterwards saw in the main forest. Plantations of sugar-cane and manioc were mingled with banana-trees, palms, pandanus and other trees, many not unlike English forms. Numbers of great water-lilies with blue flowers were growing in the shallow water, and convolvuli, as well as numerous other flowers of new kinds and colours, everywhere met the eye. The shores were flat at first, but became more hilly, and the scenery more varied, as we proceeded.

As we sailed up the river the traveller's tree (*Ravenala madagascariensis*) became very plentiful, and soon gave quite a peculiar character to the landscape. This remarkable and beautiful tree belongs to the order which includes the plantains and bananas, although in some points its structure resembles the palm rather than the plantain. It is immediately recognised by its graceful crown of broad green leaves, which grow

at the top of its trunk in the form of an immense fan. The leaves are from twenty to thirty in number, and are from eight to ten feet long by a foot and a half broad. They very closely resemble those of the banana, and when unbroken by the wind have a very striking and beautiful appearance. The name of "traveller's tree" is given on account of its affording at all times a supply of cool pure water upon piercing the base of the leaf-stalk with a spear or pointed stick. This supply is owing to the broad surface of the leaves, which condenses the moisture of the atmosphere, and from which the water trickles down into the hollow, where the leaf-stalks join the stem. Each of these forms a little reservoir, in which water may always be found. The leaves, as are also those of the banana, are used to beat the thatched roofs in case of fire, on account of the amount of water which they contain.

The name of "builder's tree" might be given to it with equal or greater propriety, for it is as useful to the coast people as the cocoanut-palm is to the South Sea islanders. The leaves are used for thatching, and the long leaf-stems fastened together form the filling-in of the framework for the walls and partitions; the bark is beaten out flat and forms the flooring; while the trunk supplies timber for the framing. Quantities of the fresh leaves are used every day and take the place of plates and dishes; and at the New Year's festival the *jàka*, or meat eaten at that time, was always served up, together with rice, upon pieces of the leaves of this tree or of the banana; and a kind of spoon or ladle was, and is still, formed, made by twisting up part of a leaf and tying it with the tendrils of some climbing plant. The tree ranges from the sea-coast to the height of about fifteen hundred feet, after which it begins rapidly to disappear. At an elevation of about a thousand feet it is extremely abundant, much more so, in fact, than any other tree, and is the one striking and peculiar feature in the vegetation. It is not found so much in the forests as on the hillsides in the open country; it has some half-dozen or more different names among the various tribes on the eastern side of the island.

Our canoe voyage was nearly twenty miles in length, the last two or three up a narrow creek not above twenty or thirty feet in width. In one of the narrowest parts of the stream we were



LOW-CLASS GIRL FETCHING WATER
On her head is the *siny*, in her hand the *zinga*



A SIHÀNKA WOMAN PLAYING THE VALIHA
The strings are cut out of the bamboo, with calabash bridges

stopped by a tree which had fallen across the creek, just above the surface of the water. With some trouble and difficulty the canoes were each hoisted over the obstruction, the luggage being shifted from one to another. Some friends who came up about five months afterwards told me that the tree was still there. Probably it had caused a stoppage hundreds of times, yet no one dreamed of taking the little extra trouble necessary to remove it altogether from the passage. It was just the same in the forest : when a tree fell across the path, there it lay for months until it rotted away. Palanquins had to be hoisted over it, or with difficulty pushed beneath it, but it was never removed until nature helped in the work. It was no one's business to cut it up, or to take it out of the way ; there were no " turnpike trusts," and the native government never gave themselves any concern about the matter.

We were glad to land at Maròmby at ten o'clock, for rain came on, and before we were well housed it poured down heavily for some time. Here we got as dessert, after breakfast, a quantity of wild raspberries, which, while not equal in flavour to the English kind, are very sweet and refreshing. Close to the house where we stayed for our meal was a coffee plantation ; the shrubs grow to a height of seven or eight feet, and have dark glossy leaves, with a handsome white flower. The small scarlet fruit, in which the seed—what we term the " berry "—is enclosed, contains a sweetish juice. The coffee plant thrives in most parts of the island, and its produce probably will become an important part of its exports.

Near the house were also a number of orange-trees, and here I had the gratification of seeing an orange grove with the trees laden with thousands of the golden-hued fruit. We were allowed to take as many as we liked, and as the day was hot and sultry we were not slow to avail ourselves of the permission. Perhaps there are few more beautiful sights than an orange grove when the fruit is ripe on the trees. The " golden apples " of the Hesperides must surely have been the produce of an orange plantation.

The rain ceased after a time, but we did not get off until past two o'clock, for our men became rather obstinate, and evidently wanted to stay at Maròmby for the rest of the day. This we were not at all disposed to allow. At last we started, and in a

few minutes had a specimen of the adventures that were in store for us in passing through the forest. In attempting to ford a stream, one of my men suddenly sank nearly to his waist in a thick yellow mud. It was by the barest chance that I was not turned over into the water; however, after some scrambling from one man's shoulder to another, I managed to reach dry land. There was a shaky, rickety bridge a little higher up the stream, and by this I contrived to get across.

We now struck right into the hills, up and down, down and up, for nearly four hours. The road was a mere footpath, and sometimes not even that, but the bed of a torrent made by the heavy rains. It wound sometimes round the hills and sometimes straight up them, and then down into the valleys at inclinations difficult enough to get along without anything to carry but oneself, but, with heavy loads, requiring immense exertion. My palanquin described all kinds of angles; sometimes I was resting nearly on my head, and presently almost on my feet. When winding round the hills we were continually in places where a false step of my bearers might have sent us tumbling down sixty or seventy, and sometimes a hundred, feet into the valley below. A dozen times or so we had to cross streams foaming over rocks and stones, to scramble down to which, and out again, were feats requiring no ordinary dexterity. Again and again I expected to be tumbled over into the water or down the rocks, the path being often steeper than the roof of a house. Several times I got out and walked up and down the hills in order to relieve the men; but I afterwards found that I need not have troubled myself, as they easily carried me up much steeper ascents. Some of these scenes were exceedingly beautiful and, with the rushing, foaming waters, overhung with palms, ferns, plantains and bamboos, made scores of scenes in which a landscape artist would have delighted.

In passing along I was struck with the peculiar outline of the hills; they are mostly rounded cones or *mamelle*-shaped, not connected together in chains, but detached, so it appeared that road-making would be very difficult and would have to be very circuitous. In almost every sheltered hollow were clumps of the traveller's tree, together with palms and bamboos. The hills increased in height as we advanced, while beyond them all in the far distance we could see the line of the mountains form-

ing the edge of the central highland, and covered with dense forest in every part. The scene, but for the tropical trees, resembled the Lancashire and West Riding scenery, along the Todmorden valley. As far as I could make out, the hills appeared to be mostly of bright clay, interspersed with quartz. Great black masses of gneiss rock crop out on the sides of many of them in most curious, fantastic shapes.

On the east coast and for some way westward there is no distinct rainy season, as in the interior of Madagascar ; it rains more or less all through the year. The temperature did not exceed that of warm summer days in England, with cool mornings and evenings. We reached Rànomafàna as it was getting dusk, my lads bringing me in, as usual, at a smart trot, after doing fifteen or sixteen miles in less than four hours. The name of this village means "hot waters," and is derived from some hot springs which bubble up in a small stream not far from the houses. The water close to this spot is too hot to touch with the hand or foot ; but as it mingles with the cold river water it soon becomes tepid, and I found that in wading in the stream I could have any degree of heat or cold as I chose. Many people come to bathe in these hot waters, and find benefit in certain complaints.

At this place I procured specimens of that remarkable vegetable production, the lace-leaf plant, or water yam (*Ouvirandra fenestralis*). The existence of this plant had long been known to botanists, but it was introduced into Europe by the Rev. W. Ellis after his first visit to Madagascar (1853-1854) ; and from plants brought by him to England it was propagated, and specimens were sent to many of the chief botanical collections, as well as to Kew, Chiswick and the Crystal Palace. I knew of this plant being abundant in some of the streams on the east side of the island, and I therefore described it as well as I could to one of my bearers. A little time after our arrival at the village he brought me three or four plants, together with the roots, and in one case with the flower also attached. The leaves were from six to eight inches long and an inch and a half wide ; but I afterwards found at Mauritius that they grew to more than double this size in the Royal Gardens at Pamplemousses.

As the name implies, the leaf is like a piece of lace-work, or,

more strictly speaking, like a skeleton leaf, the spaces between the veining being open. The veining is something like that of a lily leaf, the longitudinal fibre running through the whole length, and crossed at very regular intervals by the transverse veins, which are of thread-like fineness. The specific name, *fenestralis* ("windowed"), conveys this idea of a regular arrangement of structure. The leaf stalk varies in length with the depth of the water, always keeping a little below the surface. Each plant has ten or a dozen leaves branching from the root, which in the specimens brought to me resembled a small potato. It can be eaten, as its taste is like the farinaceous yam, common to most tropical countries; and from this likeness the generic name, *ouvirandra*, is derived—*ouvy* or *ovy* being the native word for yam. The plant grows in running water and thrives best in warm situations. The flower grows on a long stalk and rises a little above the surface of the water; it is of a pinkish colour, dividing into two curved hairy tufts. Few objects can be imagined more beautiful or interesting for cultivating in an aquarium than this lace-leaf plant, which Sir W. J. Hooker termed "one of the most curious of nature's vegetable productions." It is an endogenous plant, included in the order *Juncaginaceæ*, to which the arrow-grasses and the rushes belong; it is found not only in the eastern region, but occurs in streams near the upper belt of forest in the interior. It is said to be very tenacious of life, retaining its vitality even if the stream where it grows is dried up; the leaves in their various stages of growth pass through a gradation of colour, from a pale yellow to a dark olive-green. When full grown, its dark green leaves form the limit of a circle two or three feet in diameter.

Taking a walk round the village before it was dark, I noticed several houses raised on posts five or six feet above the ground. At the top of each post, just under the floor, was a projecting circle of wood a foot or more in diameter and polished very smooth. I found that these buildings were granaries, and were raised in this way to protect the rice from rats, which are a great annoyance in most parts of the country. The smooth ring of wood effectually prevented them from getting any farther than the top of the upright posts. The ladder for getting up to these granaries is a very primitive contrivance; it

consists merely of a round pole with notches cut in the upper side to prevent the foot from slipping. On a subsequent visit to Madagascar my wife and I had to use one of these *tràno àmbo* ("raised houses"), as they are called, as a bedroom, and very clean and comfortable we found it, free from all insect plagues; the floor was of plaited bamboo, springy to walk on, although the getting up to it or down from it was a somewhat difficult feat.

We were astir early on the Wednesday morning and left our quarters at six o'clock. It was a beautiful morning as we commenced our journey and began to mount hills and descend valleys and cross streams as before—with this difference, that the hills became higher and steeper, and the paths more difficult. How our men managed to carry themselves up and down, to say nothing of the heavy loads on their shoulders, puzzled me, but they did their work apparently without much fatigue. I noticed that many of those who carried heavy loads had the flesh and muscles on the shoulders thickened into a sort of pad, caused, I suppose, from the constant weight and friction of their burdens. When carrying they wore but little clothing, merely the *salàka* or loin-cloth, and sometimes a sleeveless jacket of hempen cloth or other coarse material. In the cool mornings they generally wore over the shoulders the *làmba*¹ of *rofia*, or of hemp cloth; but during the rest of the day this was bound tightly round the waist, or thrown upon the palanquin. The two sets of four bearers used to take the work in "spells" of a quarter of an hour or twenty minutes at a time; when the others relieved them they did not stop, but those taking the poles of the palanquin would stoop under and take it on their shoulders with hardly any jerk, even when running at full speed. Occasionally one set would take the duty for an hour or more, while if going fast, or on very difficult ground, they relieved each other very frequently. Every three or four minutes they changed the load from one shoulder to another, the leaders lifting the pole over their heads.

In proceeding on our journey we met great numbers of men bringing poultry, manioc, potatoes, rice, and other produce from the interior to the coast. These articles are mostly brought to Tamatave and other ports, so that the ships trading to these places are supplied with abundance of provisions at a

very moderate rate. The poultry were enclosed in large open panniers or baskets made of strips of bamboo plaited together and slung at each end of a bamboo or a pole of light wood. We also overtook many men taking European goods up to the capital—quantities of cheap and gaudily painted crockery, iron cooking-pots, and a variety of other articles. Many also carried salt, and others the same open wicker baskets in which fowls are brought down, but now containing quantities of the fibre of the *rofia* palm. This is taken up into the interior to be manufactured into cloth. Sometimes these men were met singly, or two or three together, but more often they travelled in companies of ten, twenty or thirty. Occasionally we met a Hova officer in a palanquin borne by his slaves, and often with his wife and other members of his family, also in palanquins, with female slaves attending them and running at a good pace to keep up with the men.

In one day we often saw a great variety of face and colour, and met representatives of several of the different tribes which people the island; and these differ considerably in colour and features. Among the faces we saw, although there were few that could be called handsome, judging by a European standard, there was yet a large proportion of good heads, with high, well-formed foreheads, and a general look of quickness and intelligence. The impression given was certainly not that of a race low in mental organisation or capabilities.

At Ambàtoharàna, where we breakfasted, we were favoured with a little native music while our meal was being prepared. The instrument consisted of a piece of bamboo about four feet long, with parts of the strong outer fibre detached and strained over small pieces of pumpkin shell like the bridge of a violin. With this simple contrivance the performer produced a soft plaintive kind of music, not unlike the tones of a guitar. This instrument is called a *valiha*, and is played by the fingers. A simpler and ruder musical effect is obtained by a kind of bow of wood, with two or three strings, and to which, at one end, the half of a large gourd is fixed to give resonance; this is called *lokàngam-bdatàvo* (*vòatàvo*, pumpkin), but its sound is poor and monotonous.

Although the paths we traversed were most difficult, the scenery was singularly delightful. There are few more beautiful

forms in tropical vegetation than the bamboo, which unites the most perfect symmetry and bright colour, and in some places a particular species² gave quite a special character to the scenery. The long elastic stems, thirty or forty feet in length, three inches or more in diameter at the base, and tapering to a fine point, were curving over the path in every direction, and with their feathery whorls of leaves, yellowish-green in colour, growing from every joint, were a constant delight to the eye. Sometimes a whole valley seemed filled with bamboos; while in others the *rofia* palm and the tree-ferns were the prevailing forms.

Our midday journey this day was a continual ascent, until we were evidently at a considerable elevation above the sea. From one ridge we had a most extensive prospect and could see the Indian Ocean fifty or sixty miles behind us, while before us was a yet higher chain of hills, dark with dense woods of the main line of forest. As we rode along, I could not but observe the capabilities of the country and its vast powers of production, were it brought extensively under cultivation. The country is rich also in mineral wealth—iron, gold, copper, and other metals, as well as graphite and probably also petroleum.

We came this day into a belt of tree-ferns, some of large size, with their great graceful fronds arranged horizontally in a circle round the top of the trunk. There were also numbers of pine-apples growing wild, with the magnificent scarlet flowers just developing into fruit. We descended to, crossed, and for some time went along a beautiful river, resembling in many parts the Dove at Dovedale, and in others the Wharfe at Bolton. The view from the top of an immense hill of the river winding far below was most charming. The paths by which we ascended and descended would have astonished us in England, but by this time a moderately level and smooth path had become an object of surprise. In some places there was only a narrow passage between rocks overhung with vegetation, most picturesque, but most difficult to travel by.

We got in early in the afternoon to Ampàsimbé, a rather large village. While waiting for dinner we watched the women at the opposite house preparing the material from which they make the *rofia* cloths, called *rabannas* in Mauritius. It is the inner fibre of the long glass-like leaves of the *rofia*-palm.³ The

cuticle on each side is peeled off, leaving a thin straw-coloured fibrous substance, which is divided by a sort of comb into different widths, according to the fineness or otherwise of the material to be made. The fibre is very strong and is the common substitute for string in Madagascar. In other villages we saw the women weaving the cloth with most rude and primitive looms, consisting merely of four pieces of wood fixed in the mud floor of the house, and a framework of two or three pieces of bamboo. The material they make, however, is a good, strong-looking article, with stripes of various colours and patterns woven into the stuff, and is extensively used by the poorer classes. With the same simple loom the Hova women make many kinds of woven stuffs; of hemp, cotton, *rofia* fibre, and of this last, mingled with silk or cotton, very pretty and useful cloth of a straw colour, being made in this way. Of the strong native silk they also weave very handsome *lambas* of bright and varied colours and patterns, such as used to be worn on all festive occasions by the higher classes, as well as the more sombre dark red *lambas* which are used by all classes for wrapping the dead.

We had now reached a part of the country where the *rofia* palm was the most prominent object in the vegetation, not on the hills, however, like the traveller's tree, but chiefly in the valleys, where there is plenty of moisture. This palm grows very abundantly and can easily be distinguished from the other trees of its order. The trunk has a rough and rugged surface, and this reaches the height of twenty to thirty feet; but the leaves are its most striking feature; they are magnificent plumes, of enormous length, quite as long as the trunk itself. The midrib of these leaves has a very strong but light structure, some four to five inches wide at the base, and on this account it is largely used for ladders, for palanquin poles, for roofing, and indeed for anything needing lightness as well as strength. On these midribs are set a great number of grass-like pinnate fronds, from which, as already noticed, string and fibre are prepared for weaving. Great clusters of seeds (or fruits?), which are enclosed in a shiny brown skin, hang down from the top of the trunk. These are used for boxes to enclose small articles, as jewellery, etc. At one part of our journey the only road was through an extensive sheet of water, through which



BETSIMISARAKA WOMEN

They are standing on a native mat outside a wooden house



HOVA WOMAN WEAVING

The article is a silk lãmba on a native loom

rose hundreds of *rofias*, like the interior of some great temple, a most peculiar and beautiful sight, the great fronds above us quite shutting out the sunshine and making a green twilight below them.

If we had been disposed to copy the titles of some popular evening entertainments, the nights preceding this Wednesday's one might have been termed: "A Night with the Fleas," and "A Night with the Mosquitoes," but this was emphatically "A Night with the Rats." We saw and heard them racing round the eaves of the house before we lay down, but as soon as the light was put out they descended and began to rattle about our pots and pans in search of food. We got up and fired a pistol among them, and this appeared for a time to scare them away; but later on their attentions became so personal that we were obliged to light a candle and keep it burning on the floor all night. After this we had comparative quiet, but before lighting the candle they had been scampering over my companion in his hammock and over myself as I lay on the floor.

Thursday's journey, although shorter than that of most days, was perhaps the most difficult of all, especially the morning division of it—hills steeper than ever, and, if possible, rougher footpaths, so that we were often obliged to get down and walk, making the journey very fatiguing. For nearly three hours we were passing through dense forest, and in some places the path was really frightful. I do not wonder that a small company of soldiers brought up in the early years of the century by Captain Le Sage laid themselves down in despair at the difficulties of the roads they had to traverse. I found along the roadside several varieties of those beautiful-leaved plants, veined with scarlet and buff, which were so much cultivated in England about that time. Ferns of all kinds were very abundant, from the minutest species to the great tree-fern.

Our afternoon's journey took us for some distance along a beautiful river which foamed and roared over the rocks in its course, and which we forded repeatedly. The path was most picturesque, but very fatiguing; in many places the track could hardly be distinguished at all from the dense rank growth of plants and long grass. We arrived at Béfòrona at one o'clock and fully intended to have proceeded another stage, as

it was so early in the afternoon, but we found our men so exhausted that we were obliged to stay there for the rest of the day.

Here it may be noted that we had now entered some way into the lower and wider of the two belts of dense forest which extend for several hundred miles along the eastern side of Madagascar, and cover the mountains which form the great ramparts of the highland of the interior. There is continuous forest from nearly the north of the island to almost the southern extremity ; its greatest width is about fifty miles, north of Antongil Bay ; but to the south of the Antsihànaka province it divides into two. Of these two belts, the upper one, which clothes the edge of the highland, is the narrowest, being not much above ten or twelve miles across, but the lower belt is from twice to three times that breadth. On the western side of Madagascar there is no such continuous line of forest ; there are, it is true, many extensive portions covered with wood, but in many places the vegetation consists more of scattered clumps of trees ; while in the south-west, which is the driest part of the island, the prevailing trees and shrubs are euphorbia, and are spiny in character. Mr Baron reckoned that an area of nearly thirty thousand square miles of the whole surface is forest-covered country. We shall have other opportunities of examining these extensive forest regions, so all we need say further at present about them is, that no one with any eye for the beautiful and wonderful can pass through them without astonishment and delight. The variety and luxuriance of the foliage, the great height of many of the trees, the countless creeping and climbing plants that cover their trunks and branches, the multitude of lianas that bind everything together in a maze of cordage and ropes, the flowers which sometimes cover whole trees with a mass of colour, crimson, or golden, or purple—all these make a journey through these Madagascar forests a new pleasure and lead one to exclaim : “ O Lord, how manifold are Thy works ! ”

We were now also ascending towards the central highland of the interior, which lies at an elevation of from five to six thousand feet above the sea-level. Above this general elevation, which, however, is broken up by lesser hills and mountains in all directions, so that there is no level country except what

have been the beds of ancient lakes, now dried up, the highest mountains do not rise to great altitudes. The *massif* of Ankàratra, which forms the south-western boundary of Imèrina, the home of the Hova tribe, does not quite reach nine thousand feet in height above the sea. Until quite recently the summits of Ankàratra were always supposed to be the highest points of the island, but it has lately been discovered that there is a mountain called Ambòro, about eighty miles from the northernmost point, which is still higher, being nine thousand four hundred feet above sea-level. On my return to the coast in 1867 I found how much less difficult the journey from Antananarivo to Andòvorànto was than that in the opposite direction, owing, of course, to our descending nearly five thousand feet instead of ascending the same.

Béfòrona is situated in an almost circular valley, with a river running through it and surrounded by forest-covered hills. The village, like most in this part of the country, has the houses arranged in a square. Their floors are generally raised a foot or two above the surface of the ground, and are formed of bark, beaten out flat and laid on bamboos. The framing and roof are made of poles or bamboo, filled in with the stalks of the traveller's tree, and thatched with leaves of the same tree. In the centre of these village squares was a flagstaff, and in others a pole with the skulls and horns of bullocks fixed to it. These are mostly memorials of the festivities connected with the last observance of the circumcision ceremonies, which are very important events with all the Malagasy tribes. We had a visit from the wife of the chief of the village, who brought us a present of fowls and rice.

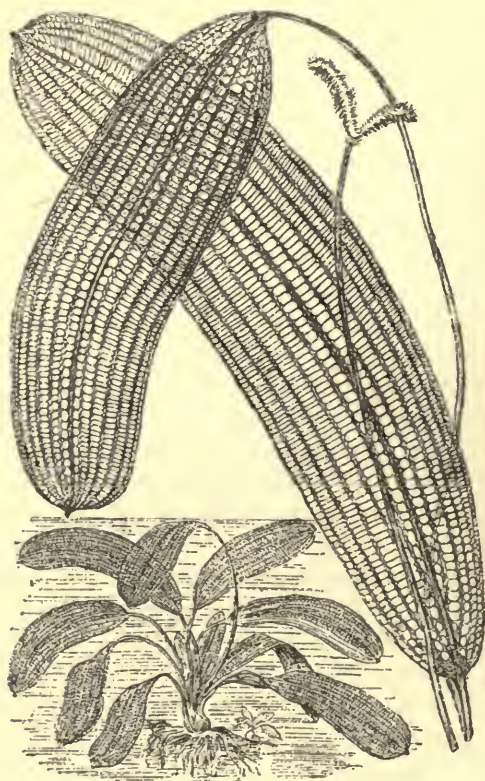
After resting a while we strolled along one of the streams with our guns, to try to obtain specimens of some of the birds peculiar to the neighbourhood. On our way back we observed some boys using an instrument called *tsirika*, with which they were able to kill small birds. It consists of a long and straight palm stem, taken from a small and beautiful palm with a stem resembling a bamboo. A small arrow, tipped with an iron point, is inserted and is discharged by blowing at the larger end. About three inches of the end has wool to fill up the aperture and prevent any windage. They use this blow-gun with great precision and can strike a mark at a considerable distance. A

very similar weapon, but with poisoned arrows, is used by the Indians of South America in the countries bordering the Amazon and its tributaries.

¹ *Làmba* is the Malagasy word for cloth generally, but it has also a specific use as applied to the chief article of native dress.

² *Raphia ruffia*.

³ This *rofia* fibre has of late years been largely used in England for tying up plants; but dealers in it persist in calling it "*rofia* grass," which is certainly not a correct name.



Lace Plant

CHAPTER V

FROM COAST TO CAPITAL : ALAMAZAOTRA TO ANTANANARIVO

ON the Friday morning we left Béfòrona soon after five o'clock and for nearly four hours were passing through the forest, here known as that of Alamazaotra, over the highest hills and the most difficult paths we had yet seen. Certainly this day's journey was the most fatiguing of any on the whole route, so that when we reached our halting-place I was thoroughly exhausted and glad to throw myself on the floor and sleep for an hour or more. At one part of the road there is a long slope of clay, known as "Fitomanianòmby," or "weeping-place of the bullocks," so called from the labour and difficulty with which the poor animals mount the steep ascent on their way down to the coast. In coming down this and similar places the utmost care was necessary on the part of the bearers ; but they were very surefooted and patient and took every precaution to carry their burden safely. In ascending we often required the help of all eight men to drag the palanquin up to the top. The villages in the heart of these vast woods are few and far between. Our halting-place for breakfast consisted merely of three or four woodcutters' huts in a few square yards of cleared ground.

Our afternoon's work was much the same as that of the morning. In many places the rain had made a perfect slough of thick mud, and our men had hard work to get through. I could not cease to wonder how my heavy luggage was brought along. For a considerable distance our way lay along a most romantic-looking stream, whose course was broken by great masses and shelves of rock, reminding me of Welsh river scenery. Often in the higher parts of the road, where the rivers down in the gorges were hidden by the dense masses of wood, we could hear the roar of waters in the otherwise profound stillness of the forest. At the chief pass in this chain of hills we passed a tremendous cliff of rock, which rises sheer out

of the valley to a height (so it has been ascertained) of nearly two thousand feet, certainly one of the grandest natural objects I had ever seen. This stupendous mass is called Andriambavibé, "Great Princess"; the large trees on the summit looked like mere bushes seen from below.

Notwithstanding the fatigue of the journey, it was impossible not to be struck with admiration and delight at the grandeur of the vegetation. The profusion and luxuriance of vegetable life were very extraordinary. There appeared to be few trees of great girth of trunk, but their height was considerable, especially in the valleys. High over all the other trees shot up the tall trunks of many varieties of palms, with their graceful crowns of feathery leaves. A dense undergrowth of shrubs, tree-ferns, and dwarf palms made in many places quite a green twilight; while overhead the branches were interlaced and bound together by countless creeping and climbing plants, whose rope-like tendrils crossed in all directions and made a labyrinth which it was impossible to pass through. Occasionally we came across large trees in flower, giving a glorious mass of colour. With these exceptions, however, flowers were comparatively few; and during subsequent journeys I have found that it is true in Madagascar what Dr Alfred R. Wallace has pointed out as characteristic of all tropical countries—viz. that in the tropics are not to be found great masses of floral colour. For these one must go to the temperate zones; foliage, overpowering in its luxuriance and endless variety, is indeed to be found in the tropics, but not the large extent of colour given by heather, buttercups, primroses, or a field of poppies in England.

The orchids, however, were very abundant. Wherever a fallen tree hung across the path, there they found a lodging-place, and beautified the decaying trunks with their exquisite waxy flowers of pink and white. Although what has just been said of wild flowers is true on the whole, there were a considerable number to be seen, if carefully looked for. My bearers soon perceived how interested I was in observing their novel and curious forms, and brought to me all the different varieties they could find, so that in the evening my palanquin contained a collection of flowers and plants gathered during the day. I managed to dry a few, but the greater part had to be thrown

away, as I had no means of preserving them to take up to the capital.

In some parts of the woods the different species of bamboo give quite a distinct character to the vistas. Some of them shoot up in one long slender jointed stem, with fringes of delicate leaves, and hang over the paths like enormous whips. Another kind, a climbing species, with stems no thicker than a quill, clothes the lower trees with a dense mantle of pale green drapery. As we got into the higher and cooler parts of the forest, numbers of the trees had long pendent masses of feathery grey lichen, a species of *Usnea*, giving them quite a venerable appearance, and reminding me of the opening lines of Longfellow's "Evangeline":

"This is the forest primeval. The murmuring pines and the hemlocks,
Bearded with moss, and in garments green, indistinct in the twilight,
Stand like Druids of old, with voices sad and prophetic,
Stand like harpers hoar, with beards that rest on their bosoms."

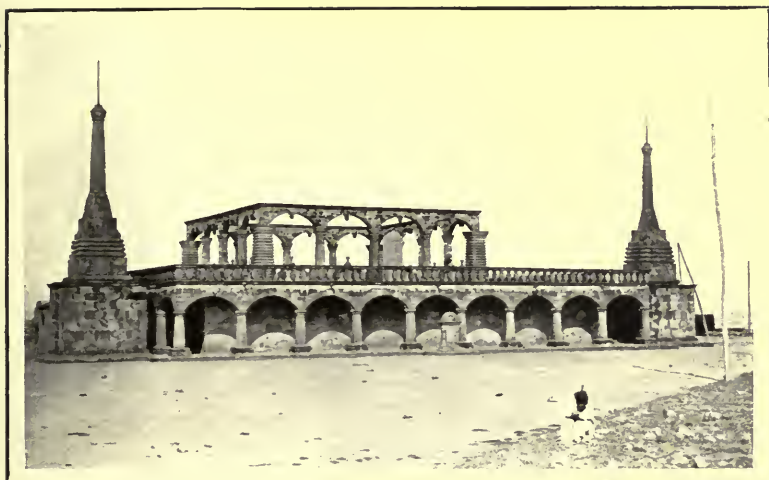
Although the vegetation was most luxuriant, I was surprised and somewhat disappointed by the stillness of the forest, and the few signs of animal life and the rarity of the song of birds. It is true that at certain seasons the notes of many songsters may be heard, and that in certain places the cries of different species of lemur resound through the woods. Still, on the whole, I had imagined that a tropical forest would be much more visibly full of life. Subsequent experience and research showed me that there is a considerable variety and number of living creatures in these forests, but they have to be looked for, and when found they are full of interest, as we shall see. It may be noticed, too, that both bird and insect life are more evident in the outskirts of the woods and in the occasional openings among the trees than in the densest forest, all living things delighting in sunlight.

From what has been already said it will be seen that the flora of Madagascar presents many new and striking forms of vegetable life; but its fauna is still more noteworthy, for it presents one of the strangest anomalies in the geographical distribution of animals. This zoological peculiarity consists as much, or more, in what is wanting, as in what is present. Separated from Africa by a channel not three hundred miles

broad at one point, we should have supposed that Madagascar would partake to a great extent of the same characteristics, as regards animal life, as the neighbouring continent. But it is really remarkably different. There is a strange absence of the larger species of mammalia, and this statement applies not only to the forests but to all parts of the island, the bare highlands of the interior and the extensive lower plains of the west and the south.

First of all, the large carnivora are all wanting ; there are no lions, leopards, tigers, panthers, or hyenas. The large thick-skinned animals, so plentiful in the rivers and forests of Africa, have no representatives in Madagascar ; no elephant browses in the woods, no rhinoceros or hippopotamus lazily gambols in the streams, although there was a small species of the last-named pachyderm which was living during the latest quaternary epoch. The numerous species of fleet-footed animals—antelope, gazelle, deer, and giraffe, zebra and quagga—which scour the African plains are entirely absent ; and the ox, the sheep, the goat, the horse and the ass have all been introduced, the three former from Africa and the others from Europe. The order of mammalia most developed here is the quadrumana, but this, again, is represented by but a single division, the lemurs and their allies, which are the most characteristic animals of the island. There are no true monkeys, baboons, or apes, nor do the gorilla or chimpanzee put in an appearance. The lemurs are very distinct from all these and are pretty creatures, bearing little resemblance to the half-human, grotesque appearance of many of the quadrumanous animals, or to the savage character of the larger apes and baboons. They vary in size from that of a large monkey to species not larger than a rat. They are mostly gentle in disposition, and some kinds are tame enough to be kept about the house as pets.

It is probable that the mammalia of Madagascar are now fairly well known, although a few of the smallest species may still await discovery ; and the following summary may be here given of their divisions and numbers—excluding the bats, of which there are seventeen species, ninety species of terrestrial mammals have been classified and described, and of the following orders :—Lemuroida, thirty-nine species ; Carnivora,



FAMILY TOMB OF THE LATE PRIME MINISTER, ANTANÀNARIVO
The tomb is under the upper open arcade



ROYAL TOMBS IN THE COURTYARD OF THE PALACE, ANTANÀNARIVO
On the right is that of Radàma I, on the left that of Rasohèriva

almost all being civets and quite small animals, ten species ; Insectivora, including shrews and small creatures resembling hedgehogs, twenty-four species ; Rodentia, rats and mice, sixteen species ; and Ungulata, one or two species of river-hog. It will be seen that about two-fifths of the mammalian fauna belong to the lemurs, and that with very few exceptions, all the others are small and inconspicuous animals ; many, however, are of exceptional interest, as we shall see. From a consideration of the facts regarding the mammals, as well as those of the other forms of animal life found here—birds, reptiles and insects—the following conclusions may be drawn : First, Madagascar was anciently joined to Africa, receiving its fauna from the continent, whose animal life was then much like that of Madagascar at the present time ; but it had also certain connections at an early geological epoch with Asia and even with South America, as there are undoubted affinities between its fauna and those of these distant regions. Secondly, this African connection of Madagascar existed before the abundant animal life of the continent entered it from the north, and when Africa was a great continental island—that is, its central and southern portions, and separated from Europe and Asia by a shallow sea, now the Sahara Desert. The upheaval of that sea-bottom was probably to some extent contemporaneous with the subsidence of the land which is now the Mozambique Channel. Thirdly, Madagascar must have remained for a long period separated from every other part of the globe ; and while the western and southern portions have been repeatedly submerged, the highland interior, of palæozoic rocks, is very ancient land, and much of its fauna is also antique in its character.

But to leave this zoological dissertation and return to our journey. I have not mentioned that more than once we saw small companies of lemurs high over our heads, leaping with wonderful agility from branch to branch, and uttering their peculiar cry. These cries could often be heard when the animals were not seen, and sounded almost like the cry of children ; and to myself there was always something pleasant in it, as that of living creatures rejoicing in their freedom in these boundless forests.

On Saturday morning I wished Mr Plant good-bye and set off,

leaving him at the village, which he was to make his headquarters for some time while collecting natural history specimens in the forest. The road was not nearly so difficult as on the previous day, so that I had no need to alight from the palanquin all the way to Ampàsimpòtsy, where I stayed to breakfast. The hills were much more moderate in height, with a good deal of open clearing, although the forest still continued on either hand, but not in those dense masses of wood through which we had passed the last three or four days. Leaving our halting-place at noon, we gradually got clear of the woods, and early in the afternoon ascended a very high hill, from which we could see a great distance both westward and eastward. Behind us were the hills and valleys covered with forest through which we had travelled, while in front stretched a great undulating plain, bare and almost without a tree, except in a few places, where there were large circular patches of wood. This was the plain of Ankay, which separates the two belts of forest, and is the home of the Bezànozàno tribe. Beyond this again, ten or twelve miles away, was the upper forest, clothing the slopes and summits of the edge of the interior highland. Careful examination of this region has shown that it was formerly the bed of a great lake, from two to three hundred miles long, extending from the present Lake Alaotra, farther north, and is its gradually diminishing remnant. Subsequent action of water has, however, so cut up its former level that it now presents a very uneven surface.

It was dull travelling alone after the pleasant companionship of a fellow-traveller; and in making arrangements for meals, etc., I felt how perfectly helpless a man is when he cannot speak so as to be understood. I was a barbarian to my men, and they were barbarians to me; for my stock of Malagasy words was very limited, and probably almost unintelligible as to pronunciation, so that I was at a complete standstill for nearly everything I wanted to say. We reached Mòramànga, a rather large village, at the commencement of the plain, soon after three in the afternoon and there halted for the rest of the day. This place was a military post of the Hova government, and on passing through passports were examined by the officer in charge.

Next morning we were stirring early and left Mòramànga while it was yet dusk. There was a thick mist, and my men

were shivering with the cold, for we were now two thousand nine hundred feet above the sea, and their scanty clothing was but a poor protection. For an hour or two we saw little except for a few yards around us ; but as the sun rose the fog rolled up like a vast curtain, revealing the line of the Ifòdy and Angàvo hills straight before us ; the slopes were partly covered with trees, but a good deal of their surface was brown and bare. In the deepest of the many valleys which cut the surface of the Ankay plain runs a beautiful and rapid river, the Mangòro, about one hundred and fifty feet wide where we crossed it in canoes. This is the longest river of the east coast, and would make a fine means of access to the interior, were its course not interrupted by rapids and cataracts at many points.

Soon after crossing the river we commenced the ascent of Ifòdy, a very steep and difficult path, for an hour or more ; but as we mounted higher and higher a glorious prospect gradually revealed itself. Looking back after we had reached the summit, there was the Mòramànga plain, bounded by the distant forest stretching away north and south, until lost in the dim distance, while below us the Mangòro could be seen in a wavy blue line in the Ankay plain. Before us, to the left, was a lovely valley, fertile and green with rice-fields, watered by the Valàla river and shut in by the Angàvo range of mountains, while on the right was a confused mass of hills, looking like a mighty sea which had suddenly been hardened and fixed in its tossings.

There was much more evidence of cultivation as we proceeded, the valleys being occupied by rice-fields, which were kept covered with a few inches of water by careful irrigation. Among the bird population of Madagascar there are some eighteen species of herons and storks which are seen in the marshes and rice-fields. One of the most noticeable of these is the *Tàkatra* or tufted umber, a long-legged stork with a large plume or crest. It builds an extraordinarily large nest, which is visible at a considerable distance and might be taken at first sight for half-a-load of hay. It is usually placed on the fork of a large tree, and is composed of sticks and grass, plastered inside with a thick lining of mud. It is from four and a half to six feet in diameter, dome-shaped, with a lateral entrance, and is divided into three chambers, in one of which its two large eggs are laid. The entrance is by a narrow tunnel and is always placed so as

to be difficult of access, though the nest itself may be quite easy to approach. From this conspicuous nest, and the sedate way in which the *tàkatra* marches about seeking for its food, many native superstitions have gathered about the bird, one of which is that those who destroy its nest will become lepers. If the sovereign's path was crossed by a *tàkatra*, it was considered unlucky to proceed, and the royal procession had to retrace its steps. Many native proverbs also refer to this bird. There are also two other species of stork, one of which is always found together with other shore birds ; it lives in companies of from six to twelve individuals at river-mouths, feeding on crustacea and mulluscs, from which habit comes its name of *Famàkiakòra* or " shell-breaker."

We were now nearing the country of the Hovas, and could see an evident difference in the appearance of the inhabitants. They were lighter in colour and had longer and straighter hair than the coast tribes. But owing to the fashion, at that time, of both sexes wearing their hair done up in a number of knots, and from the apparent absence of whisker or beard, I was sometimes puzzled to know at first sight whether the people we passed were men or women ; and there was little difference in dress, the *làmba* being worn by both. Not only were the people different in appearance to those we had mostly seen, but the dwellings also had a much more civilised look. Several of the houses at *Ambòdinangàvo* were of the true Hova type, with high-pitched roofs, made of strong timber framing and filled in, for the walls, with thick upright planking, instead of the slight bamboos and leaves of the coast and forest houses. Some had boarded floors and had a room in the roof ; and the crossed rafters at the gables were carried up for two or three feet above the ridge. The house in which I stayed had a much more comfortable appearance than any I had been in before, having two rooms on the ground floor, the walls covered with matting, and there were actually chairs ! a luxury I had not experienced since leaving Tamatave. I felt that I was getting near civilisation again.

While dinner was preparing I strolled out into a ravine near the house and was struck with the beauty and variety of the insects, as indeed I had been in many parts of the journey. There were butterflies of gorgeous hues, dragonflies, crimson,

blue and dull gold in colour, grasshoppers with scarlet wings, and the very spiders with gold and silver markings. Some species of these latter were of great size ; we saw hundreds of them in their large geometric webs stretching over the paths as we came along.

On Monday morning, 12th October, we left the village before sunrise and immediately began the ascent of Angàvo, which rises from fifteen hundred to sixteen hundred feet above the valley. It is an enormous mass of granite, capped with clay, the summit being scarped and fortified with earthworks ; it is, however, not a detached mountain rising from a plain on every side, but rather a vast natural bastion or outwork of a higher level of country. There was a gorgeous sunrise, which covered the greater part of the sky with a crimson light, unlike anything I had ever seen before. Then for another hour or two we were passing through the upper belt of forest, here very narrow, being only ten or twelve miles across, but as dense and as beautiful as the lower and wider belt. And it was just as difficult to travel through as the other forest, descending into the gorge of the Mandràka river and then scaling the steep ascents. One place especially, where we crossed the stream, was a perfect combination of beauty—rushing waters, luxuriant foliage of fern and palm and bamboo—and hundreds of large blue and black papilio butterflies hovering over the river.

At eight o'clock we reached Ankèramadinika, a village close to the last ascent of the forest, and waited for a few minutes while my bearers bought manioc root at the little market. The people crowded round me, bringing various articles of food for sale—sweet-potatoes, honeycomb, and wild raspberries. We had now left behind us the forest region and were on the bare open uplands of Imèrina, the air being clear and keen. The hills were less steep and more rounded, reminding me of some parts of the English chalk downs, and there was hardly a tree to be seen. In several places the granite or gneiss takes a dome-like form ; and in others the same rock formed the highest points. For many miles I could see them rising high over every other hill ; one of these, on the southern side of a huge mountain called Angàvokèly, was like a titanic castle ; another, which is divided into three and called Tèlomiràhavàvy ("Three Sisters"), was like a vast church.

There were signs of approaching the capital in the number of villages which came in sight. The country also was much more cultivated, chiefly, however, in the valleys, where the bright green patches of the newly sown rice gave a refreshing contrast to the bare and brown appearance of the hills and downs, now parched and dry after five or six months without rain. In many places great black patches showed where the dry grass had been set on fire. This is done shortly before the rains come on, and the rank hay-like grass is succeeded by a crop of fine short herbage suitable for pasture. About noon we caught sight of the large village of Ambàtomànga, then two or three miles distant. This place had an important and picturesque appearance, being considerably larger than any town on the road. Over a number of smaller dwellings one large house rose conspicuous, with its lofty high-pitched roof and double verandah. Close to the village is a lofty mass of blue gneiss rock, about a couple of hundred feet in height, and crowned by a stone tomb and other buildings, giving it the air of a fortification. Passing through a large weekly market, where hundreds of people were buying and selling, we at length entered the last station on the road to Antanànarivo.

Ambàtomànga had quite the appearance of a fortified town, having walls of clay surrounding it, and deep fosses outside them. I stopped at the large house which I had noticed at first, and found it a well-finished timber structure, with venetian shutters and framed doors, quite a contrast to the mere sheds in which I had slept for ten nights past. It was divided into three rooms on the ground floor, with walls, floor and ceiling all well planed and finished. The owner, a fine-looking man and a native noble, gave me a welcome in a little broken English; but his knowledge of European tongues was apparently confined to half-a-dozen short phrases, for he repeatedly said, "Thank you, sir," giving me a hearty shake of the hand at the same time, as if he thought that was the proper formula to be observed. A little before dusk I walked out with him to the fort-like tomb on the top of the rock. In the light of the setting sun the red clay hills gave back the warm rays with an intensity of colour that was remarkable. The tomb at the top is a large stone structure, well worked, with an open balustrade and bold mouldings. Walking round the house after dusk, I saw a lurid glare

in the sky on all sides, and then found it was produced by the grass burning on the hills and downs, which showed in lines of fire for many miles in all directions.

Early on Tuesday morning, with a glad heart I took my seat in my palanquin, rejoiced to think that this was the last stage in my long journey. About three quarters of an hour after leaving Ambàtomànga we caught our first sight of the capital, still twelve or fourteen miles distant, and I could not but be struck by its size and fine situation, a much larger city than I had expected, built on the summit and slopes of a lofty rocky hill some two miles long from north to south, which was covered with dark-looking houses. In the centre stood conspicuous the great bulk of the chief palace and its smaller neighbour, their arched verandahs and steep roofs, all painted white, and shining in the morning sun, towering over every other object. It was a memorable moment to me, as I thought of what had happened in Antanànarivo within the last quarter century, and that my work was to raise lasting memorials to the brave Malagasy who had suffered and died for their faith.

On we went over the long rolling moor-like hills, losing sight of the city every now and then, and presently coming in view of it again as we mounted the ridges ; and every half-hour brought out more of the details of the place and revealed its masses of dark houses, clustered on the slopes of the rocky hill. Several streams we crossed by means of stone arched bridges, and I was struck by the number of villages to be seen in every direction, many of them enclosed in high walls made of red clay, laid with care in regular courses and apparently hard and durable. The houses were all built of the same material, and many of them were enclosed in circular and others in square courtyards with gateways. Many of the villages were surrounded with deep fosses, sometimes two and even three yards deep, now generally filled with bananas, peach and other fruit trees, and some with walls and stone gateways, giving one the impression that there must have formerly been much internal warfare to need such elaborate defences. This indeed was the case before Imèrina was governed by one sovereign, about a hundred years ago.

Within a mile or two of the city we passed for a quarter of an hour through a perfect cloud of locusts, which covered the ground and filled the air. At a distance these insects appeared like a

low-lying cloud of dust ; and when near to one, and seen in certain directions, the sun shining on their wings gave them almost the appearance of a snow shower. I began to realise one of the plagues of Egypt. Many varieties of locust are common in Madagascar, and occasionally they do great damage to the crops. The Malagasy, however, make use of them for food, and when a cloud of them appears, men, women and children are all out catching them ; and for a few days afterwards great brown heaps of them are to be seen at all the little wayside shops. They are said to taste something like shrimps, without any insides ; but I must confess I never brought myself to taste them, for they are anything but inviting in appearance.

At length I was carried into a compound near the foot of the city hill, and after some delay was met by one of the L.M.S. missionaries and conducted by a most difficult and breakneck path up into the triangular central space called Andohàlo. At the north-eastern corner of this space was the dispensary and dwelling of our good medical missionary, Dr Davidson, from whom and Mrs Davidson I received a hearty welcome, and in a short time also from the rest of the missionary brethren. With a glad and thankful heart I found myself in the capital of Madagascar, with cheerful anticipations of being able to do something in the service of Him who had protected me thus far, and of helping in various ways the Malagasy people.

CHAPTER VI

THE CHANGING MONTHS IN IMÈRINA : CLIMATE, VEGETATION AND LIVING CREATURES OF THE INTERIOR

MY object in these chapters is to describe, as vividly as I am able, the varied aspects of the different months throughout the year in this central province of Imèrina, as they present themselves to anyone who lives in the capital city of Antanànarivo, and is frequently travelling in the country around it. I want to show the variety of nature during the changing seasons, as the result of the heat or cold, and of the moisture or drought of the climate. And it must be remembered that although this central province of Madagascar is by several degrees well within the tropics, our climate for some months of the year is by no means the "tropical" one supposed in our ordinary English use of that word. On these interior highlands, from three to five thousand feet above the sea-level, the south-easterly winds blow from June to August with a keenness and force which it needs thick clothing to withstand, and makes a wood fire during the long evenings a very pleasant addition to the comforts of home life.

The seasons in the central regions of the island are practically only two : the hot and rainy period, from the beginning of November to the end of April ; and the cool and dry period, during the other months, from May to October. The Malagasy are, however, accustomed to speak of four seasons of their year—viz. the *Lòhataona*—i.e. "head of the year"—during September and October, when the planting of the early rice is going on, and a few showers give promise of the coming rains ; the *Fàhavaratra*—i.e. "thunder-time"—when severe storms of thunder and lightning are frequent, with heavy downpours of rain, from the early part of November to the end of February or into March ; the *Fàraràno*—i.e. "last rains"—from the beginning of March and through April ; and lastly, the *Rinàina*—i.e.

“time of bareness”—when the grass becomes dry and withered, from June to August.

Taking therefore the seasons in order, from the beginning, not of January, which gives no natural division of the year, but from the early part of September, when the blossoms of the trees speak of the “good time coming” of renewed verdure, I shall note down, in their succession, the varying aspects of the country, in climate, vegetation, and culture of the soil, as well as the animal life, throughout the changing year.

Before, however, proceeding to do this, it may give greater distinctness to the mental picture I want to draw for those who have never been in Madagascar, if I try to describe in a few words the appearance of this central province of the island, especially of that portion of it which is in the neighbourhood of the capital. From the usually pure and clear air of this elevated region, which is not defiled by the smoke of chimneys, nor often thickened by the mists of the lowlands, one can see for extraordinary distances, and hills and rocks twenty or thirty miles away stand out more sharp and distinct than they would usually do in England at only four or five miles’ distance.

Let us go up to the highest point of the long rocky ridge on and around which Antanànarivo is built, from which we can “view the landscape o’er,” and try and gain a clear notion of this “heart of Imèrina,” as it is often called by the Malagasy. The city hill reaches the greatest elevation at a point called Ambòhimitsimbina—*i.e.* “Hill of regarding”—which is seven hundred feet above the general level of the rice-plains around it. From this “coign of vantage” there is of course a very extensive view in every direction, and we see at once that the surrounding country is very mountainous. East and south there is little but hills of all shapes and sizes to be seen, except along the valleys of the river Ikòpa and its tributaries, which come from the edge of the upper forest, thirty miles or so away to the east. To the north the country is more undulating, but at ten or twelve miles away high hills and moors close in the view, some of the hills rising into mountains. The country is everywhere in these directions, except in the river valleys, covered with red soil of various shades of colour, through which the granite and gneiss foundations protrude at almost every elevated point in huge boulder-like rocks, and form the



EARTHENWARE POTTERY

Making cooking utensils and pitchers (*Siny*)



DIGGING UP RICE FIELDS

Notice the long-handled and long-bladed native spade, the handle serving as a lever to turn over the clods

summits of every hill and mountain, often in dome-shaped or boss-like masses, and in some like titanic castles and towers.

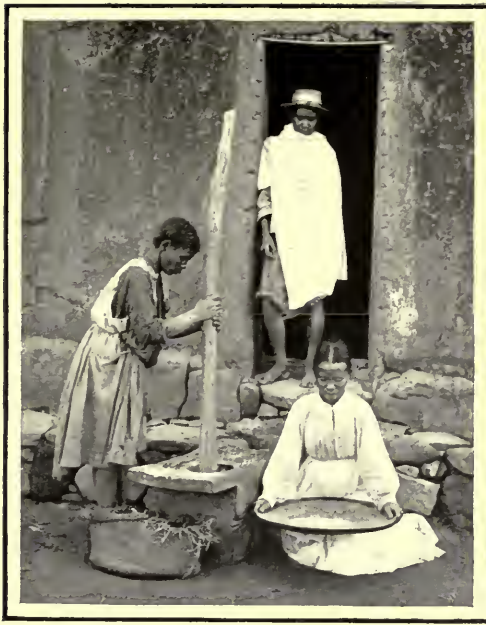
There is little foliage to be seen except on the top of some of the hills where the ancient towns and villages are built, and in such places a circle of old *àviàvy* trees and an occasional *amòntana* tree give a pleasant relief to the prevailing red and ochre tints of the soil, and, in the cold and dry season, to the russet and grey hues of the dry grass on the bare hills and downs. The largest mass of green is at the old capital, Ambòhimànga, eleven miles away to the north, where the steep sides of the hill are still covered with a remnant of the original forest, which formerly was doubtless much more extensive in this part of the central province. In the deep fosses which surround old villages there is also often a considerable amount of foliage, as well as in the hollows and along the streams. But it must be confessed that a large extent of Imèrina, in common with the rest of the interior, consists of bare rounded down-like hills, very uninteresting in character; although towards sunset, in the slanting rays, these hills have a softness of outline in their curves which has a decided element of beauty not to be ignored.]

To the west, from north to south, the prospect is very extensive. To the south-west there rises by very gradual slopes, at some thirty-five miles' distance, the mass of Ankàratra, its three or four highest peaks reaching an elevation of nearly nine thousand feet above the sea, and about half that height above the general level of the country. But even at such a distance the summits usually stand out sharp and clear against the sky. Due west and north-west is a considerable extent of comparatively level country, beyond which mountains fifty miles away are distinctly seen on the horizon. In the foreground, stretching away many miles, is the great rice-plain of Bétsimitàatra, from which numbers of low red hills, most of them with villages, rise like islands out of a green sea where the rice is growing. Along the plain the river Ikòpa can be seen, winding its way northwards to join the Bétisibòka; the united streams, with many tributaries, flowing into the sea through the Bay of Bèmbatòka. This great plain, "the granary of Antanànarivo," was formerly an immense marsh, and earlier still an extensive lake with numerous bays among the surrounding hills; but since the embanking of the river by

some of the early kings of Imèrina, it has become the finest rice-plain of the island and, with its connected valleys, furnishes the bulk of the food of the people of the central province.

The embankments require, of course, constant attention during the rainy season, when the river is swollen by the heavy rains ; and during the time of the native regime, an unusually wet season would cause them to give way, so that the rice-fields were flooded. At such times the whole population would be called out to help in stopping the breaches, and I remember one occasion, a Sunday, when we had no afternoon service, and with others of my brother missionaries I spent several hours in carrying sods and stones, together with our people. Another such calamity occurred in January 1893 ; for on the night of Saturday, the 28th, and the following day, there was an unusually heavy storm, doing immense damage, destroying hundreds of houses and village churches, and breaking the river banks, so that in a day or two hundreds of thousands of acres of the great rice-plain were under water, three or four feet deep. In some parts it was difficult to trace the river banks ; it was “ water, water everywhere,” and scores of low hills were again turned into islands, cut off from all communication, except by canoe, with the world around them. If one could have forgotten the terrible loss to the people of their crops of rice just ready to be cut, it was a most beautiful scene, and reminded one that in ancient times this great plain was always a lake, when many now extinct animals, reptiles and gigantic birds found a home in it and on its shores. For centuries the heavy rains—probably far heavier then than now, from the greater extent of forest—went on filling up the valleys with the rich black and blue loam ; gradually the lake became less and less deep ; slowly the river cut out its bed ; and then man came on the scene, and the old native kings aided nature by embanking the river ; the marshes became rice-fields and supplied with food the present large population which lives all around it.

From this elevated point at least a hundred small towns and villages can be recognised, many of them marked by the tiled roof, and often the tower, of the village church, which shines out distinctly amid the brown thatched roofs of most of the houses. This view from the summit of the capital is certainly



POUNDING AND WINNOWING RICE
A palanquin bearer is in the doorway



A HOVA MIDDLE-CLASS FAMILY AT A MEAL
Rice is the staple food, with a meat or vegetable relish

an unrivalled one, in Madagascar at least, for its variety and extent, as well as for the human interest of its different parts, as shown by the large population, the great area of cultivated land, the embanked rivers, and the streams and water-channels for irrigation seen in every direction.

SPRINGTIME : SEPTEMBER AND OCTOBER.—With the early days of September we may usually say that springtime in Imèrina fairly sets in, and that the year in its natural aspects properly commences. By a true instinct, arising doubtless from long observation of the change of the seasons, the Malagasy call this time *Lòhataona*—*i.e.* “the head, or beginning, of the year”—when nature seems to awake from the comparative deadness of the cold and dry winter months, during which the country has looked bare and uninviting, but now begins again to give promise of fertility and verdure. The keen cold winds and drizzly showers of the past few weeks give place to warmer air and clearer skies, and although usually there is but little rain during September, the deciduous trees begin to put forth their leaves, and flower-buds appear as heralds of the fuller display of vegetable life which will be seen after the rains have fallen.

The great rice-plain to the west of Antanànarivo still looks, during the early days of the *Lòhataona*, bare and brown ; but, if we examine the prospect more closely, we shall see that in various places, where the plain borders the low rising grounds on which the villages are built, there are bright patches of vivid green. These are the *kètsa* grounds or smaller rice-fields, where the rice is first sown thick and broadcast, and where it grows for a month or two before being planted out in the larger fields, which are divided from each other by a low bank of earth, a few inches broad and only a foot or two in height.

As the season advances, the people everywhere begin to be busy digging up their rice-fields, both large and small, the clods being piled up in heaps and rows in order to give the soil the benefit of exposure to the sun and air. All this work is done by the native long-handled and long and narrow bladed spade, driven into the ground by the weight of the handle, as the Malagasy wear no shoes and so could not drive down the spade by the foot, in European fashion, while the plough is still an unknown implement to them. The water-courses, by which

water is brought to every rice-plot, are now being repaired in all directions. The chief supply of water is from the springs found at the head of almost every valley, which is carefully led by channels cut and embanked round the curves of the hillsides, being often taken thus for a considerable distance from its source. Eventually this little canal resolves itself into a small stream traversing the valley, from which smaller channels convey the water to every field, so as to moisten the clods after they have been dug over.

The water-supply for the great Bètimitàtatra plain is derived from the Ikòpa river and its many tributaries. Canals tap these rivers at various points, in order to irrigate the fields at lower levels farther down their course. A large quantity of water is thus diverted from the rivers during September and October, so that the smaller streams are almost dry, and even the Ikòpa and its affluents, good-sized rivers at other times of the year, then become shallow and easily fordable.

Before the end of October a large extent of the great plain, especially to the north and north-west, is completely planted with rice; and a green level, looking like one vast lawn, stretches away for many miles in this direction, without any break or visible divisions. This green is the *vàry alòha*, or "former rice," the first crop, which will become ripe in the month of January, or early in February. Smaller expanses of bright green appear in other directions also, especially along the courses of the rivers, but a considerable extent of the plain directly to the west of the capital is still russet-brown in colour, and will not be planted until a month or two later. From this will come the later rice-crop, the (*vàry*) *vàky ambiàty*, which is planted in November or December and becomes fit for cutting about April. This latter crop is so called because the flowering of the *ambiàty* (*Vernonia appendiculata*) shrub, about November, gives notice to the people that planting-time has come. This shrub is very conspicuous about this time of the year from its masses of white—slightly tinged with purple—flowers.

The *kètsa* grounds are covered before sowing with a layer of wood and straw ashes, so that they have quite a black appearance. Before this, however, the clods have been broken up and worked by the spade into a soft mud, with an inch or two of water over all, and on this the grain is sown broadcast, springing

up in two or three weeks' time and looking like a brilliant emerald carpet.

There are usually a few heavy showers about the end of September or the early part of October, which are called *rànonòrana màmpisàra-taona*—i.e. "rain dividing the year"; but occasionally no rain falls until the rainy season regularly commences, so it is dry and dusty everywhere, the ground cracks, and everything seems thirsting for moisture. The heat increases as the sun gets more vertical, although the nights are pleasantly cool. Yet notwithstanding the dry soil the trees begin to blossom. Most conspicuous among them is the Cape lilac (*Melia azederach*), a tree introduced from South Africa about eighty or ninety years ago by the first L.M.S. missionaries, and now thoroughly naturalised in the interior of Madagascar. It grows to be a good-sized tree, and many hundreds of them are to be seen in and around Antanànarivo, making the place gay with their profusion of pale greyish-lilac flowers, and fragrant with their strong perfume.

There are many large orchards in Imèrina, planted chiefly with mango-trees and presenting a refreshing mass of evergreen all the year round. But at this time, when looking from a little distance, the green of the leaves is largely mingled with a tinting of reddish-brown, caused by masses of flowers, in spikes, chiefly in the upper part of the trees. Later on the purplish tint of the new leaves gives another shade of colour. The produce of these trees is an excellent fruit; and there are three or four varieties of it, one kind, "the stone mango," being more globular in shape; another, "the satin-mango," being smaller, like a large plum, with a delicate flavour and scent. Another most widely grown fruit is the peach, which is more used cooked than eaten raw; and others are the *bibàsy* or loquat, the quince, the rose-apple, the orange, and the *ròtra*, a good-sized tree with a profusion of small black pear-shaped fruits, somewhat astringent when eaten raw, but excellent for cooking and for preserves. The vine also is largely cultivated, chiefly a black variety; while bananas and plantains and pine-apples are to be had all the year through.

The low banks of earth which form the boundary walls of plantations are largely planted with a species of *Euphorbia*, of which there are two varieties, one with brilliant scarlet bracts

and the other of pale yellow tint, the leaves appearing on the prickly stems later on.

As the season advances the people burn the grass over the hillsides and open moors, as we saw at Ambàtomànga when coming up the country. There can be no doubt that to this practice is largely attributable the bare and treeless appearance of the central provinces. The young trees which would spring up, especially in the hollows and sheltered places, have no chance against the yearly fires which sweep over the country, and the little vegetation which has held its own is constantly liable to be lessened as time goes on. Sometimes a dozen fires, long curving lines of flame, may be seen at once in different directions, and these give a strangely picturesque appearance to the nights of springtime in Imèrina.

The weather often becomes very hot and sultry before the rains come on, and the usually bright clear skies and pure atmosphere of other months are exchanged for thick oppressive days, when the distant hills disappear altogether, and the nearer ones seem quite distant in the dense haze. This is probably due, to a great extent, to the grass-burning just described, and also to the frequent burning of the forest away to the east. As the weather gets warmer a few birds come up from the wooded regions of the country, and wherever there is a small patch of wood the oft-repeated cry of the *Kankàfotra*, the Madagascar cuckoo, may be heard, much resembling the syllables "*kow-kow, kow-kow-koo.*"

And here we must notice more fully the birds to be seen in Imèrina. They are few compared with those in the warmer and forest regions, and are mostly of powerful flight, principally birds of prey, swifts, swallows and water-birds. The two coast regions—east and west—are, on the contrary, well peopled with birds of all sorts, and while the greater part of these inhabit indifferently one or the other region, there are a certain number which have their habitat almost exclusively in one region only, and give it its special characteristics. There are also some which keep to a still more limited area, not going beyond a very restricted range. As far as is at present known, two hundred and ten species of birds have been found in Madagascar; and the very special character of its avi-fauna may be seen from the fact that it includes forty-one genera and a

hundred and twenty-four species, which are all peculiar to the island.

The rapacious birds of the country comprise twenty-two species, the majority being hawks, kites and buzzards, with several owls and two eagles. The most common bird of this order is the *Papàngo* or Egyptian kite, a large hawk found all over the island. It may be seen every day flying gracefully along in search of lizards and snakes, and the mice, rats and small birds which form its chief food, and continually swooping down upon its prey. When the long dry grass is being burned on the downs the papàngo may be noticed sweeping backwards and forwards close to the edge of the blazing grass, so as to pick up the smaller creatures escaping the advancing flames, or those which have been overtaken by them and killed. I have occasionally observed hundreds of these birds in the neighbourhood of Ambòhimànga, describing great circles, at an immense height, and have wondered how such large numbers could obtain food. This kite is the dread of the country-dwelling Malagasy, for it swoops down on their chickens and is only scared away by their loud cries and execrations. From these habits comes one of its provincial names, *Tsimalàho*—i.e. “the one who does not ask,” but takes without saying “by your leave.” It is constantly seen in company with the white-necked crows, and, like them, feeds near the villages, especially near where the oxen are killed.

Another very widely spread rapacious bird is the little lively and noisy *Hitsikitsika* or kestrel, which is found in or about every village, often perched on the gable “horns” of the houses, or even on the extreme point of the lightning conductors. It is by no means shy, and one can sometimes approach it quite closely and see its bright fearless eyes, before it darts away. It is fond of the same resting-place and, after a noisy chatter with its mate, takes a sweeping flight for a few hundred yards and returns to its former condition. Several native proverbs refer to the kestrel’s quick restless flight and its frequent habit of hovering aloft, poised almost motionless, or with an occasional quivering of the wings, which, in Malagasy idiom, is called “dancing,” for the native dances consist as much in a graceful motion of the hands as in that of the feet. Among some tribes, or families, the kestrel is a tabooed bird and it is crime to kill it.

Another hawk worth noticing, although much less common than the two previously mentioned ones, is the lesser falcon, a small but very courageous bird, which has long attracted the attention of the Malagasy for its swiftness. The native name, *Vòromahèry*, or "Powerful bird," is also that of the tribe of Hova Malagasy who inhabit the capital and its near neighbourhood, and this falcon also was adopted as a crest or emblem by the native government, and its figure was engraved on their official seals. Its flight is extremely rapid, more like that of an arrow than that of a bird.

Many of the Malagasy hawks are beautiful birds, with horizontal bars of alternate light and dark colour on breast and tail; but perhaps the most handsome of them all is the Rayed *Gymnogene*, which is of a pearly-grey colour, barred with black, while on the tail and quill feathers are broad bands of pure white and intensely glossy black. This bird stands high, having very long legs, with a crest of feathers on the crown and neck.

As the end of October draws near the people are busily at work, not only in the rice-fields, but also repairing their houses, mending their grass or rush roofs, and hurrying on their sun-dried brick or clay building before the heavy rains fall. The majority of native houses are of those materials, and everything must be finished, or at least well protected from the weather, before the rainy season comes on. The water-courses, too, need attention, and the river banks must be repaired, lest a succession of heavy rains should swell the streams, break through the embankments and flood the rice-plains.

SUMMER : NOVEMBER, DECEMBER, JANUARY AND FEBRUARY. —Summer in central Madagascar is not only the hot season, but it is also the rainy season, very little rain falling at any other time of the year. It is accordingly called by the Malagasy *Fàhavàratra*—i.e. "thunder-time"—since almost all heavy rain is accompanied by a thunderstorm; and taking the average of a good many years, this season may be said to commence at the beginning of November.

As the sun gets every day more nearly vertical at noon, on his passage towards the southern tropic, the heat increases, and the electric tension of the air becomes more oppressive. For a week or more previous to the actual commencement of the rains, the clouds gather towards evening, and the heavens are lighted

up at night by constant flashes of lightning. But at length, after a few days of this sultry weather, towards midday the huge cumuli gather thickly over the sky and gradually unite into a dense mass, purple-black in colour, and soon the thunder is heard. It rapidly approaches nearer and nearer, the clouds touching the lower hills, then down darts the forked lightning, followed by the roar of the thunder, and presently a wild rush of wind, as if it came from all quarters at once, tells us that the storm is upon us, and then comes the rain, in big heavy drops for a few seconds and soon in torrents, as if the sluice-gates of the clouds were opened. The lightning is almost incessant ; now and then, in one of the nearer crashes, it is as if the whole artillery of heaven were playing upon the doomed earth ; and for half-an-hour or so there is often hardly any interval between the crashing and reverberations of the thunder peals, the hills around the capital echoing back the roar from the clouds. Certainly a heavy thunderstorm in Madagascar is an awfully grand and glorious spectacle and is not without a considerable element of danger too, especially for anyone caught in the storm in the open, or in a house unprotected by a lightning-conductor. Every house of any pretensions in the central provinces has this safeguard, for every year many people are killed by lightning, some while walking on the road, and others in houses unprotected by a conductor. One often hears of strange freaks, so to speak, played by the lightning ; for instance, one of our college students, travelling with wife and children to the Bétsilèo, was killed instantaneously, as well as a slave near him, when sitting in a native house, while a child he was nursing at the time escaped with a few burns only. A missionary of the Norwegian Society was struck by lightning, which melted the watch in his pocket, drove the nails out of his shoes, and yet he escaped with no other harm than some burns, which eventually healed.

A large quantity of rain sometimes falls during such storms in a very short time. On one occasion three and a quarter inches fell in less than half-an-hour ; and as the streets and paths through the capital were formerly all very steep, and there was no underground drainage, it may be imagined what a roar of water there was all over the city after such a storm. The three or four chief thoroughfares were transformed into the beds of

rushing torrents and a series of cascades ; from every compound spouted out a jet of water to join the main stream, and it used to be no easy matter to get about at all in the rush and the roar. It was no wonder that most of the highways of the capital got deeper and deeper every year. Even where there was an attempt at a rough paving, a single storm would often tear it up and pile the stones together in a big hole, with no more order than obtains in the bed of a cataract. After the rains were over, the red soil was dug away from the sides to fill up the channel cut by the torrent, and so the road gradually sank below the walls of the compounds on either side of it.¹

The annual rainfall of Antanànarivo is about fifty inches, December and January being the wettest months, with an average fall of ten to twelve inches each. It is very unusual for thunderstorms to occur in the morning, they mostly come on in the afternoon ; and after the first heavy downpour a steady rain will often continue for three or four hours, and occasionally far into the night. It is generally bright and fine in the early morning ; all vegetation is refreshed by the plentiful moisture ; and the people are busy in their plantations on the sloping hillsides, digging up the softened earth for planting manioc, sweet potatoes, the edible arum, and many other vegetables.

Hail also very frequently falls during these thunderstorms ; and should it be late in the season, when the rice is in ear, great damage is often done to the growing crop. A large extent of rice-field will sometimes be stripped of every grain, the stalks standing up like bare sticks. Charms against hail had therefore in the old heathen times a prominent place in the popular beliefs and, there can be little doubt, are still trusted in and used by many of the more ignorant people. Occasionally the hailstones are of very large size and kill sheep and small animals, if they are left unsheltered. I remember a storm of this kind, when the hailstones were as large as good-sized nuts, while some were cushion-shaped and hexagonal, with a hollow in the centre, and nearly one and a half inches in diameter. In other cases they have been seen as jagged lumps of ice ; and it may be easily imagined that it is very unpleasant and somewhat dangerous to be exposed to such a fusillade.

Besides the thunderstorms like those just described, which come so close and are often so awful in their results, there is another kind of storm we frequently see in the rainy season which is an unmixed source of delight. This is when, for two or three hours together in the evening, a large portion of the sky is lighted up by an almost incessant shimmer of lightning, now revealing glimpses of a glory as if heaven itself were opening, and anon showing many different tiers and strata of clouds lying one behind the other, and alternately lighted up, making clear the outlines of the nearer masses of cumulus upon the brilliant background. How wonderful are the different colours of this lightning ! intense white, like glowing metal, now red, and now violet ; and not less wonderful are its forms ! now it is a zigzag, which plunges downwards, now it branches out horizontally, and again it darts upwards into the clouds ; and then, for a few moments, there is nothing but an incessant quiver and shimmer, which lights up first one quarter of the heavens, and then another, and then the whole. All the time no thunder is heard from this celestial display, but it is most fascinating to watch the infinitely varied effects of light and darkness, till we sometimes feel as if a “ door was opened in heaven,” and we could catch a glimpse of “ the excellent glory ” within.

Something may be said here about the native division of time. Although the European months and year have become generally known and used, the old style of months are still recognised to some extent by the Malagasy. Their months were lunar ones, and therefore their year was eleven days shorter than ours, their New Year's Day coming consequently at different times, from the first to the twelfth month, until the cycle was complete after thirty-three years. When I first came to Madagascar the Malagasy New Year began in the month of March ; and this style of reckoning time was kept up until the accession of the last native sovereign, Queen Rànavàlona III., in 1883. The Malagasy appear never to have made any attempt, by the insertion of intercalary days or any other contrivance, to fill up their shorter year to the true time occupied in the earth's annual revolution round the sun ; for of course they must have noticed that their New Year came at quite different periods after a few years. The names of the

Malagasy months are all Arabic in origin, as indeed are also the days of the week (Alahàdy (Sunday), Alatsinainy (Monday), Talàta (Tuesday), Alarobia (Wednesday), etc.); but it is curious that the month names are not the Arabic names of the months, but are those of the constellations of the Zodiac. Thus, Alàhamàdy is the Ram, Adaoro is the Bull (*daoro*=*taurus*), Adizaoza is the Twins, and so on. This appears to have arisen from the connection between astrology and the divination (*sikidy*) introduced by the Arabs several centuries ago.

The New Year was *the* great festival of the Malagasy and was observed on the first day of the first month, Alàhamàdy. It was called the *Fandròana* or "Bathing," and was kept up until the French conquest in 1895, but since then has been superseded by the Fête of the French Republic on 14th July every year. The ancient customs were, however, very interesting, and were chiefly the following:—(1) The lighting of little bundles of dried grass at dusk on the evenings of the last day of the old year and the first of the new one. These fires, possibly a relic of the old fire-worship, were called *harèndrina*, and formed one of the most pleasing features of the festival in the gathering darkness of the evening. (2) The ceremonial Royal Bathing at the great palace, when all the principal people of the kingdom were present, as well as representative foreigners, was the most prominent of all the ceremonies, giving, as it did, the name to the whole festival. At a fixed time in the evening the queen retired behind curtains fixed at the north-east (the sacred corner) of the great hall and bathed in a silver bath; after which she emerged, robed and crowned, and, carrying a horn of water in her hands, went down the assembly to the door, sprinkling the people as she passed. (She would playfully give some of us an extra splash as she went along.) (3) On the following day came the killing of oxen, doubtless the most important of all the observances in the estimation of the people generally, at any rate of the poorer classes, who then got, for once a year at least, a plentiful supply of beef. Presents of the newly killed meat were sent about in all directions to relatives and friends, and feasting and merry-making prevailed for several days among all classes. (4) For some time previous to the actual festival it was customary for the Malagasy to visit their elders and superiors in rank, bringing presents of money,

fowls, fruit, etc., using certain complimentary formulæ and expressions of good wishes.

The rains which usually fall in November soon make the hills and downs, which have got so brown and dry during the cold season, become green again. Especially does the fresh grass brighten those portions of the hillsides where the withered grass and fern had been burnt two or three months before ; and although, as already noticed, wild flowers are not so plentiful or prominent in Madagascar as they are in European countries, there are several kinds which now make their appearance and give some beauty to the scene. Among these are the *vònènina* (*Vinca rosea*), with large pink flowers ; the *avòko* (*Vigna angivensis*), bright crimson ; the *nìfinakànga* (*Commelyna madagascarica*), deep blue ; several small vetch-like plants with yellow flowers ; many others with minute yellow compound flowers, and some few other kinds. A beautiful scarlet gladiolus is seen sparingly on the downs, as well as a conspicuous and handsome white flower, with a long tubular calyx, very like a petunia.

¹ It will be understood that all this refers to Antanànarivo under native rule. Since the French occupation the city has been wonderfully improved ; well paved and drained streets have been engineered all over the place, with electric lighting and abundant water-supply.

CHAPTER VII

SPRING AND SUMMER

BESIDES flowers growing on the ground, there are many shrubs and small trees now in blossom, although some are by no means confined in floral display to the warm and rainy season. Along the hedges in some localities is a small bush, with clusters of purple leguminous flowers, called *famàmo* (*Mundulea suberosa*); branches of these shrubs are sometimes placed in a pool or stream, so as to stupefy, and thus easily obtain, any fish present in the water. Very conspicuous are the bright yellow flowers of the *tainakòho* (*Cassia lœvigata*), and the *tsiajakòmby* (*Cæsalpinia sepiaria*), and the orange-yellow spikes of the *seva* (*Buddleia madagascariensis*). More showy and handsome still perhaps are the abundant large yellow flowers of the prickly pear, which is so largely used for hedges and for the defences of the old towns and villages. The strong and sharp spines, from an inch to an inch and a half long, are the usual native substitute for pins. A species of *Hibiscus* (*Hibiscus diversifolius*) is not uncommon, with yellow flowers, which have deep red in the centre; yellow seems indeed the most common colour in the flora of Imèrina. At this time of the year also three or four species of aloe come into flower. The larger of these, called *vàhona* (*Aloe macroclada*) by the Malagasy, is much used for planting as a hedge, from its fleshy leaves being armed with sharp prickles; its tall flower spike shoots up very rapidly to a height of four or six feet. Another and smaller one, called *sahòndra* (*Aloe capitata*), has its flowers branching at the top of the stalk something like a candelabra. The numerous flowers attract, as they expand, swarms of bees. Another plant, like an aloe in appearance, called *tarètra* (*Fourcroya gigantea*) by the natives, has long leaves, with a sharp spine at the ends only; and its flower-stalk shoots up like a small mast to a height of twenty feet, with widely spreading branchlets and an immense number of light coloured

flowers. Strong fibre used as thread is obtained from the leaves, the name of the plant being indeed that used for "thread." The tall flower-stalks of these aloes and agaves form quite a noticeable feature in the Imèrina landscape in the early summer. In the orchards, soon after the mango has finished flowering, we may see the curious whitish flowers of the rose-apple, a sort of ball of long stamens, showing conspicuously among the foliage.

It is well known by those who live in Madagascar that there are, at certain seasons of the year, a number of insects found on trees which produce a constant dropping of water. Happening one day to be standing under a peach-tree in our garden from which water was dropping, I found that there were clusters of insects on some of the smaller branches. In each cluster there were about twenty to thirty insects, and these were partly covered with froth, from which the water came. The insects producing this appeared at first sight to be small beetles, about half-an-inch long, black in colour, with golden-yellow markings on the head and thorax, while on the wing-cases there was a chequer of minute spots of yellow on the black ground. After observing a single insect for a few seconds, I noticed that the tail was quite flexible and moved sideways, and was constantly protruded and then withdrawn a little, and it was evident that these little creatures were the larval form of a species of beetle. The sap of the tree is extracted in such quantities as to maintain their bodies in a state of saturated humidity. The activity of the larvæ seems to increase as the heat of the day progresses, and to diminish again towards evening. But the object of this abstraction of fluid from the tree, and the purpose it serves, is still a subject needing investigation. I have observed these insects on other trees—mangoes, acacia, *zâhana*, and others; they appear indeed to be very common, and the ground underneath the branches where they cluster is covered with small patches soaked with water. A French naturalist, M. Goudot, described an insect apparently of the same kind as that found in Imèrina as the larva of a species of *Cercopis*, and nearly related to the cicada of Europe. The quantity of water produced from a tree at Tamatave seems to have been much greater than that observed in the interior, and resembling a small rain-shower; probably this was due to

the greater heat of the coast. M. Goudot says that the perfect insect attains a length of an inch and a half, and that these also emit small drops of clear and limpid water.

Towards the beginning of December the earlier crop of rice comes into ear; and should the rains fall as usual during November, the remaining portions of the great rice-plain will be all planted out with the later crop, the whole of the level and its branching valleys presenting an unbroken expanse of green. Of this, the early rice shows distinctly as a darker shade of colour, although it will soon begin to turn yellow, as the grain ripens under the steady heat and the plentiful rainfall. Perhaps this is the time when Bêtsimitàtatra is seen in its most attractive and beautiful aspect, for every part of it is covered with rice in some stage or other of growth and cultivation.

To anyone coming for the first time into a tropical country from England, the comparative uniformity in the length of the days and nights throughout the year seems very strange. In Imèrina there is only about two hours' difference in the length of the longest day, about Christmas, and the shortest day, early in July. It is dark at about seven o'clock on the first of January, and at about six o'clock on the first of July. Thus we have no long evenings, which are such a delight in the summer months in England; but, on the other hand, we escape the long nights and the short gloomy days of the English winter. We lose also the long twilights of the temperate zone, although I have never seen the almost instantaneous darkness following sunset which one sometimes reads about. There is a twilight of from fifteen to twenty minutes' duration in this part of Madagascar. While, therefore, we miss the much greater variety of the seasons in England, we have many compensations, especially in the very much larger proportion of bright sunny days, the clear skies, and the pure atmosphere of our Imèrina climate. Very seldom have we a wet morning in any part of the year; and the heat is not more oppressive than it is in hot summers in England, while in the cold season the sharp keen air is bracing and health-giving. We never see snow in Madagascar, but a thin film of ice is very occasionally seen on the slopes of the Ankàratra mountains in July and August.

It may be interesting to notice at this point the numerous words used by the Malagasy to indicate the different times of



ROCKS NEAR AMBATOYORY

This shows the remains of the original forest. Cattle are grazing with a boy in charge

the day, from morning to evening. Clocks and watches are comparatively a recent introduction into Madagascar, nor do the people ever seem to have contrived any kind of sun-dial, although, as will be seen, they did use something else as a kind of substitute for such a time-keeper. It should be remembered that the hours given (counting in European fashion) as equivalents for these native divisions of the night and the day are only approximations, and must be taken as the *mean* of the year, or, in other words, at about the time of equal day and night, towards the end of March or of September. They are as follows :—

{ Mamaton' alina, or Misasaka alina, Maenno sahona, Maneno akaho, Maraina alina koa, Maneno goaika,	Centre of night	}	About 12.0 midnight
	Halving of night		
Manga vodilanitra,	Frog croaking,		About 2.0 A.M.:
Mangoan' atsinanana,	Cock-crowing,		3.0 "
Mangiran-dratsy,	Morning also night,		4.0 "
Ahitan-tsoratr' omby,	Crow croaking,		5.0 "
Mazava ratsy	Bright horizon	}	5.15 "
Mifoha lo-maozoto,	Reddish east		
Maraina koa,	Glimmer of day	}	5.30 "
Vaky masoandro,	Colours of cattle can be seen,		
Vaky andro,	Dusk,		" "
Piakandro,	Diligent people awake,		" "
Antoandro be nanahary,	Early morning,		" "
Efa bana ny andro,	Sunrise	}	6.0 "
Mihintsana ando,	Daybreak		
Mivoaka omby,	"		
Maim-bohon-dravina,	Broad daylight	}	" "
Afa-dranom-panala,	" "		
Manara vava nya ndro,	Dew-falls,		6.15 "
Misandratra andro,	Cattle go out (to pasture),		" "
Mitatao haratra,	Leaves are dry (from dew),		6.30 "
Mitatao vovonana,	Hoar-frost disappears	}	6.45 "
Mandray tokonana ny andro,	The day chills the mouth		
	Advance of the day,		8.0 "
	Over (at a right angle with)		
	the purlin,		9.0 "
	Over the ridge of the roof,		12.0 noon
	Day taking hold of the		
	threshold,		12.30 P.M.:

¹ These refer only to the two or three winter months.

THE HOURS

{	<i>Mitsidika andro,</i>	Peeping-in of the day	}	About 1.0 P.M.
	<i>Latsaka iray dia ny andro,</i>	Day less one step (= hour ?)		
	<i>Solafak' andro,</i>	Slipping of the day		
{	<i>Tafalatsaka ny andro,</i>	Decline of the day =	}	to
	<i>Mihilana ny andro,</i>	afternoon		
	<i>Am-pitotoam-bary,</i>	At the rice-pounding place,		
{	<i>Mby amin' ny andry ny andro,</i>	At the house post,	}	3.0 "
	<i>Am-pamatóran-janak' omby,</i>	At the place of tying the calf,		
	<i>Mby am-pisoko ny andro,</i>	At the sheep or poultry pen,		
	<i>Mody omby tera-bao,</i>	The cow newly calved comes home,		
	<i>Tafapaka ny andro,</i>	Sun touching (<i>i.e.</i> the eastern wall),		
	<i>Mody omby,</i>	Cattle come home,		
	<i>Mena masoandro,</i>	Sunset flush,		
	<i>Maty masoandro,</i>	Sunset (<i>lit.</i> "Sun dead"),		
	<i>Miditra akoho,</i>	Fowls come in,		
	<i>Somambisamby,</i>	Dusk, twilight,		
	<i>Maizim-bava-vilany,</i>	Edge of rice-cooking pan obscure,		
	<i>Manokom-bary olona,</i>	People begin to cook rice,		
	<i>Homan-bary olona,</i>	People eat rice,		
	<i>Tapi-mihinana,</i>	Finished eating,		
	<i>Mandry olona,</i>	People go to sleep,		
	<i>Tapi-mandry olona,</i>	Everyone in bed,		
	<i>Mipoa-tafondro,</i>	Gun-fire,		
	<i>Mamatón' alina,</i>	Midnight,		

This list is, I think, a very interesting one, and shows the primitive pastoral and agricultural habits of the Hova Malagasy before they were influenced by European civilisation. Previous to their knowledge of clocks and watches (which are still unknown to the majority of people away from the capital), the native houses thus served as a rude kind of dial. As, until recent times, these were always built with their length running north and south, and with the single door and window facing the west, the sunlight coming in after midday at the open door gave, by its gradual progress along the floor, a fairly accurate measure of time to people amongst whom time was not of very much account. In the forenoon, the position of the sun, nearly square with the eastern purlin of the roof, marked about nine o'clock; and as noon approached, its vertical position,

about the ridge-pole, or at least its reaching the meridian, clearly showed twelve o'clock. Then, as the sunlight gradually passed westward and began to peer in at the door, at about one o'clock, it announced "the peeping-in of the day" (*mitsidika àndro*); and then, as successive points on the floor were reached by the advancing rays, several of the hours of the afternoon were sufficiently clearly marked off: "the place of rice-pounding" (*am-pitotàam-bàry*), as the light fell on the rice-mortar, further into the house; "the calf-fastening place" (*am-pamatòran-jànak òmby*), as the rays reached one of the three central posts supporting the ridge, and where the calf was fastened for the night; and then, "touching" (*tàfapàka*), when the declining sunshine reached the eastern wall, at about half-past four in the afternoon. Other words and notes of time, it will be seen, are derived from various natural phenomena. Some other words for the division of time used by the Malagasy may be here noted. Thus "a rice-cooking" (*indray màhamàsa-bàry*) is frequently used to denote about half-an-hour; while "the frying of a locust" (*indray mitòna valàla*) is a phrase employed to describe a moment.

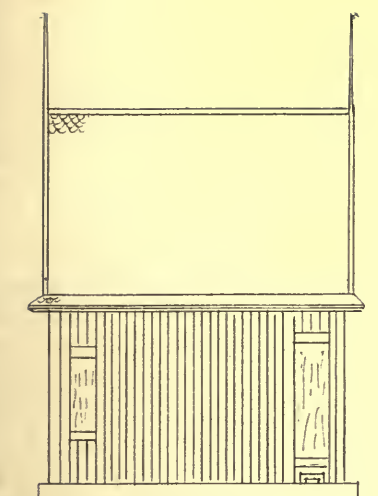
Many words exist in the Malagasy language to denote different appearances of nature which are somewhat poetical and seem to show some imaginative power. Thus the light fleecy clouds in the upper regions of the atmosphere are called "sky gossamer" (*faròran-dànitra*); the sun is the "day's-eye" (*masoandro*); the galaxy is the "dividing of the year" (*èfitàona*); the rainbow is "God's great knife" (*àntsibèn' Andriamànitra*); and a waterspout is the "tail of the sky" (*ràmbon-dànitra*).

We saw just now that in Imèrina the native houses, with the sun touching different parts of them, form a kind of primitive sun-dial; so it may be well here to say something about the structure and arrangement of a native house in this part of Madagascar.

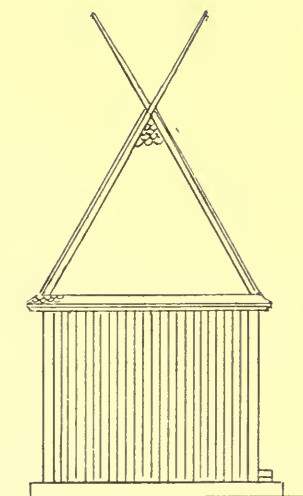
A Hova house of the old style is always built with its length running north and south; it is an oblong, the length being about half as much again as the breadth, and the door and window always on the west side, so as to be sheltered from the prevailing south-east winds; for, as there is no glass, there would be much inconvenience in facing the windward side.

There is frequently another window at the north end of the house, and often one also in the north gable. The material used always to be the hard red clay found all over the central provinces ; and this is still largely used, although sun-dried bricks are supplanting the old style of building. This clay, after being mixed with water, is kneaded by being trampled over thoroughly, and is then laid in courses of about a foot to eighteen inches in height, and about the same in thickness. Each layer is allowed to become hard and firm before the next one is set, and it is well beaten on both sides as it dries. If properly laid and of good material, the cracks are not very large when the clay is dry, and are filled up ; and it makes a very substantial and durable walling, quite as much, and more so, as the majority of cheap brick houses in England. The boundary walls of the compounds are also made of the same hard clay ; and it is remarkable how many years such material will last without much damage, although exposed almost daily, for four or five months every year, to the heavy rains of the wet season. (I know walls which had been built for several years before I saw them first forty-three years ago, and yet they seem little altered since that time.)

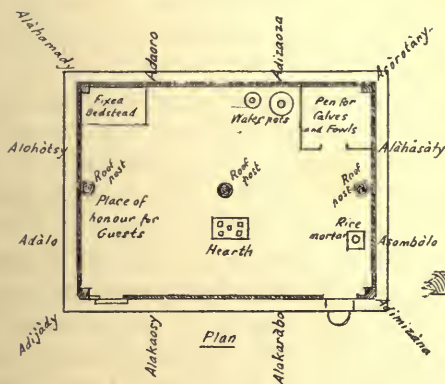
The houses of the upper classes and richer people used to be built of timber framework, the walls being of thick upright planks, which are grooved at the edge, a tenon of the tough *anivona* palm bark being inserted so as to hold them together. Two or three lengths of the same fibrous substance were also passed through each plank longitudinally at different heights from the ground, so as to bind them all firmly together round the house. The accompanying drawing will show more clearly than any verbal description the details of the structure of a Hova *tràno-kòtona*, as this style of wooden house is called (no such houses are built nowadays ; and very few of them remain ; the use of brick, sun-dried and burnt, has entirely superseded them). The roof in both clay and timber houses does not depend for its stability on the walls only, but is mainly supported by three tall posts, which are let into the ground for some depth and carry the ridge-piece. One of these posts is in the centre, and one is at each end, close to the walls inside the house. This is a wise provision, as the roofs are generally of high pitch, and in violent winds would need much more support than



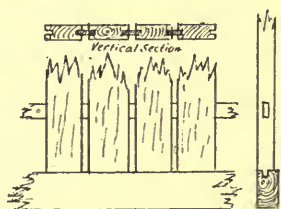
West Elevation



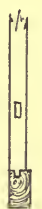
North Elevation



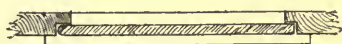
Plan



Detail of Wall planking



Section



Elevation
Detail of Door, one piece

Note The words at corners and sides of the House are month names, from the Arabic Signs of the Zodiac and are used in divination (sikidy).

Scale: 10 ft = 1 inch

§

A MALAGASY HOUSE.

Showing elevation, plan, internal arrangement, and month names.

See page 96

could be given by the walls. The gables were always thatched with the same materials as the roof, either of long grass or the *hèrana* sedge. At each gable the outer timbers cross the apex, and project upwards for about a foot or two, the extremities being notched, and often having a small wooden figure of a bird. In the houses of people of rank, the *tàndro-tràno* or "house-horns" were three or four feet long, while in some of the royal houses they projected ten or twelve feet, the length being apparently some indication of the rank of the owner. In some tribes these gable ornaments, which have become only conventional horns among the Hovas, are carved in exact resemblance of those adorning the head of a bullock.

The interior arrangements of a Hova house are very simple and are (or perhaps it would be more correct to say *were*) almost always the same.

Let us, following Malagasy politeness, call out before we enter, "*Haody, haody?*" equivalent to, "May we come in?" And while we wait a minute or two, during which the mistress of the house is reaching down a clean mat for us to sit down on, we notice that the threshold is raised a foot or more above the ground on either side, sometimes more, so that a stone is placed as a step inside and out. Entering the house in response to the hospitable welcome, "*Màndrosà, Tòmpoko é,*" "Walk forward, sir" (or madam), we step over the raised threshold. In some parts of Imèrina a kind of closet, looking more like a large oven than anything else, is made of clay at the south-east corner, opposite the door, and here, as in an Irish cabin, the pig finds a place at night, and above it the fowls roost. Near the door the large wooden mortar or *laona* for pounding rice generally stands, and near it are the *fanòto* or pestle, a long round piece of wood, and the *sahàfa* or large shallow wooden dish in which the rice is winnowed from husk removed by pounding. At about the middle of the eastern side of the house are placed two or three globular *siny* or water-pots, the mouths covered with a small basket to keep out the dust. Farther on, but near the west side, is the *fàtana* or hearth, a small enclosure about three feet square. In this are fixed five stones, on which the rice-cooking pots are arranged over the fire. And over this is sometimes fixed a light framework upon which the cooking-pots are placed when not in use. There is no chimney, the smoke

finding its way out through windows or door or slowly through the rush or grass thatch, and so the house is generally black and sooty above, long strings of cobweb and soot hanging down from the roof. Such appendages were considered as marks of long residence and honour, and so the phrase, *mainty molàly, lit.* "black from soot," is a very honourable appellation, and is applied to things ancient, such as the first Christian hymns; and missionaries who have been a long time resident in the island are given this name as a mark of respect.

The north-east corner of the house is the sacred portion of it, and is called *zòro firaràzana*—*i.e.* the corner where the *ràry* or war-chant was sung and where any religious act connected with the former idolatry was performed, and in which the *sàmpy* or household charm was kept in a basket suspended from the wall. In this corner also is the fixed bedstead, which, especially in royal houses, was often raised up some height above the ground and reached by a notched post serving as a ladder, and sometimes screened with mats or coarse cloth. West of this, close to the north roof-post, is the place of honour, *avàra-pàtana*, "north of the hearth," where guests are invited to sit down, a clean mat being spread as a seat, just as a chair is handed in European houses.

There is little furniture in a purely native house; a few rolls of mats, half-a-dozen spoons in a small but long basket fixed to the wall, some large round baskets with covers, and perhaps a tin box containing *làmbas* for Sunday and special occasions; a few common dishes of native pottery, and perhaps two or three of European make; a horn or a tin *zìnga*, for drinking water; a spade or two—these with the rice mortar and pounder and winnower already mentioned—the water-pots, and the implements for spinning and wearing, constitute about the whole household goods in the dwellings of the poorer classes. The earthen floor is covered with coarse mats, and sometimes the walls are lined with finer mats; in the roof an attic is often formed for a part of or the whole length of the house and is reached by a rude ladder. The floor of this upper chamber is frequently covered over with a layer of earth and is used as a cooking-place, with much advantage to the lower part of the house, which is thus kept comparatively free from smoke and soot.

It must be understood the foregoing description applies to the original style of native house, as unaffected by modern innovations. In the capital and the more important places, as well as in many villages, numbers of brick houses, with upper storeys and three or four or more rooms, have been built of late years; and hundreds of six-roomed houses, with verandahs carried on brick pillars, have also been erected, following a model introduced about the year 1870 by the late Rev. J. Pearse. This struck the fancy of the well-to-do people, and similar ones have been built all over the central provinces.

Few people who have lived in Madagascar can have failed to notice a small longish lump of light coloured clay stuck under the eaves of the house, or on the side of a window, or, in fact, in any sheltered place; and if we take the trouble to break off a piece, we find that this lump of clay contains a number of cells, all filled with caterpillars or spiders in a numbed and semi-lifeless condition. The maker of these cells is a black wasp about an inch long, with russet wings, and as one sits in the verandah of one's house one may often hear a shrill buzz somewhere up in the rafters, and there the little worker is busy bringing in pellets of clay with which she builds up the walls of the cell. (When I lived at Ambôhimànga, one of these wasps made a nest with several cells in my study, as the window was generally open to the air.) Presently she is off again for another load to the banks of a little stream where she has her brick-field. Kneading the red earth with her mandibles, she quickly forms it into a pellet of clay, about the size of a pea, which she dexterously picks up and flies away back to the verandah. This pellet is placed on the layer already laid, carefully smoothed and "bonded in" with the previous structure, until a cell is completed. Observations made by a careful student of animal and insect life show that about twenty-six journeys finish one cell, and that on a fine day it takes about forty-five minutes to complete it. This is only one out of many cells, however, placed on the top of each other.

With regard to the storing of these cells with food for the grubs of the wasp, Mr Cory¹ found that the number of spiders enclosed in eleven cells varied from eight to nineteen. These are caught by the wasp, stung so as to be insensible, but not

100 BUILDING AND BURROWING WASPS

killed, and then the egg is laid in their bodies, so that on being hatched the grub finds itself in the midst of food.

Another species of these solitary wasps is a much larger insect, about two inches in length, and she makes nests, which are extremely hard, and are like half-buried native water-pots, with the mouths facing the observer, and arranged regularly one above the other. When finished they are plastered over with rough gravel. Unlike the wasp previously mentioned, this one does not fetch the clay for building purposes from the banks of a stream, but carries the water to the dry earth, which it then damps and kneads into balls. The cells are stocked with caterpillars, which are stung and numbed in the same way as the spiders are treated by the first-named wasp. There are usually three caterpillars placed in each cell.

Another wasp, also very common, does not build cells, but digs a burrow in the ground, even in pretty hard places, like a well-trodden road. Some of these use caterpillars for stocking their burrows, some large spiders, and some crickets, but all drag or carry their prey on foot, even the largest of them. One small wasp, when carrying a spider, first amputates all its legs and then slings the body beneath her. The burrows of the larger wasp are deep in comparison with the size of the insect, being frequently a foot or more in depth. Mr Cory gives a graphic description of a battle between one of these wasps and a large spider, in which, however, the former managed to sting its prey and capture it.

There is one very small wasp that makes no cell or burrow, but chooses a long hole in a piece of wood, or a small bamboo, etc., for the rearing of its larvæ. "Each kind of wasp seems to have its own peculiar way of hunting; some run down on foot by scent for long distances; some dash down violently into the web of a spider, and catch him as he drops from out of it; while others again seize their prey upon the wing, especially the social wasps. The males of all are lazy and do no work." ²

January is usually the wettest month of the year in Imèrina; and in some years there occurs what the Hova call the *hafitòana*, or "seven days"—that is, of almost continuous rain, although it more usually lasts only three or four days. Such a time is most disastrous for houses, compounds and boundary walls, for the continuous rain soaks into them and brings them down

in every direction. From the steep situation of the capital, almost every house compound is built up on one side with a retaining wall, and on the other is cut away so as to form a level space.

The prolonged moisture, combined with the heat of this time of the year, naturally makes everything grow luxuriantly. The hillsides again become green and pleasant to the eye; our gardens are gay with flowers, and in many places the open downs display a considerable amount of floral beauty. I have never seen elsewhere such a profusion of wild flowers as that which met our view when travelling from the south-west to Antanànarivo in December 1887. Leaving Antsirabé and proceeding northwards, the level country was gay with flowers, which literally covered the downs, and in many places gave a distinct and bright colour to the surface of the ground. Among these the most prominent was a pale pink flower on stems from a foot to eighteen inches high, called by the people *kòtosàÿ* (*Sopubia triphylla*), and also the lovely deep blue flower called *nìfinakànga*, which latter covered the paths and also occurred very abundantly among the grass. In many places, especially near villages, whether deserted or still inhabited, a plant with small pale blue flowers (various species of *Cynoglossum*), almost exactly like our English "forget-me-not," grew in dense masses, showing a blue-tinted surface even at a considerable distance. The *vonènina*, with a pale pink flower, was very frequent, as well as several species of bright yellow flowers, one with a head of minute florets, looking like a small yellow brush; others were star-shaped, the whole forming in many places a brilliant mass of gold. Three or four species of white-flowered plants, one of them a clematis (*Clematis bojeri*), were very frequent; and a few late examples of terrestrial orchids were seen. Five or six weeks previously these were among the most abundant flowers met with, and their clusters of waxy-white flowers were very conspicuous. Other species of orchid, of rich crimson and also of purple, were even more beautiful.

We reckoned that there were from twenty to thirty different species of wild flowers then in bloom on these downs of Vàkinan-kàratra, gladdening our eyes by their varied beauty and abundance on that glorious morning. The flowers, however,

grew much scarcer as we travelled over higher ground ; but six weeks previously these upper *tanèty* had also been gay with great masses of the brilliant crimson flowers of a leguminous plant, which grew in clusters of many scores of spikes growing close together. Our ride that day obliged us to modify the opinions previously held as to the poverty of Madagascar in wild flowers.

¹ The Rev. C. P. Cory, B.A., formerly of the Anglican Mission in Madagascar.

² I am indebted for the information here given about wasps to an interesting paper contributed by Mr Cory to the fourteenth number of *The Antananarivo Annual* for 1890.

CHAPTER VIII

THE CHANGING MONTHS IN IMÈRINA : CLIMATE, VEGETATION AND LIVING CREATURES OF THE INTERIOR

AUTUMN : MARCH AND APRIL.—It will be understood from what has been previously stated as to the divisions of the seasons in the Imèrina province that, as with the seasons in England, there is some variety in different years in the times when they commence and finish. Generally, both crops of rice—the earlier and the later—are all cut by the end of April, although in the northern parts of the province it is usually five or six weeks after that date. But if the rains are late, and should happen to be scanty in February and March, harvest work is still going on at the end of May. In fact, owing to there being these two crops of rice, with no very exactly marked division between the two, autumn, in the sense of rice harvest, is going on for about four months, and sometimes longer, as just mentioned, and extends over the later months of summer as well as the two months of autumn or *Fàraràno* (March and April). In January those portions of the great rice-plain which lie north-west of the capital, as well as many of the lesser plains and valleys, become golden-yellow in hue, very much indeed like the colour of an English wheat-field in harvest-time ; and after a few days patches of water-covered field may be noticed in different places, showing where the crop has been cut, and the few inches of water in which it was growing show conspicuously in the prospect. As the weeks advance, this water-covered area extends over larger portions of the rice-plain, until the whole of the early crop has been gathered in, so that in many directions there appear to be extensive sheets of water. I well remember, when once at Ambòhimanàrina, a large village to the north-west of Antanànarivo, how strange it appeared to see people setting out to cross what seemed a considerable lake. But of course there was no danger, as the water was only a few inches deep.

As there are channels to conduct water to every rice-field, small canoes are largely used to bring the rice, both before and after it has been threshed, to the margin of the higher grounds and nearer to the roads. At the village just mentioned, which is like a large island surrounded by a sea of rice-plain, there is one point where a number of these channels meet and form quite a port ; and a very animated scene it presents at harvest-time, as canoe after canoe, piled up with heaps of rice in the husk, or with sheaves of it still unthreshed, comes up to the landing-place to discharge its cargo.

In a very few weeks' time the watery covering of the plain is hidden by another green crop, but not of so bright and vivid a tint as the fresh-planted and growing rice. This is the *kòlikòly*, or after-crop, which sprouts from the roots of the old plants. This is much shorter in stalk and smaller in ear than the first crop, and is often worth very little ; but if the rains are late, so that there is plenty of moisture, it sometimes yields a fair quantity, but it is said to be rather bitter in taste.

In cutting the rice the Malagasy use a straight-bladed knife ; and, as the work proceeds, the stalks are laid in long curving narrow lines along the field, the heads of one sheaf being covered over by the cut ends of the stalks of the next sheaf. This is done to prevent the ears drying too quickly and the grain falling out before it reaches the threshing-floor. This last-named accessory to rice-culture is simply a square or circle of the hard red earth, kept clear from grass and weeds, sometimes plastered with mud, and generally on the sloping side of the rising ground close to the rice-field. Here the sheaves are piled round the threshing-floor like a low breastwork. (Occasionally the rice is threshed in a space in the centre of the rice-field, mats being spread over the stubble to prevent loss of the grain.) No flail is used, but handfuls of the rice-stalks are beaten on a stone fixed in the ground, until all the grain is separated from the straw. The unhusked rice is then carried in baskets to the owner's compound and is usually stored in large round pits with a circular opening dug in the hard red soil. These are lined with straw, and the mouth is covered with a flat stone, which is again covered over with earth ; and in these receptacles it is generally kept dry and uninjured for a considerable time.

In most years the end of April and the beginning of May are

very busy times with the Malagasy ; almost all other work must give way to the getting in of the harvest ; the fields are everywhere dotted over with people reaping ; most of the poorer people we meet are carrying loads of freshly cut grain on their heads, or baskets filled with the unhusked rice, and large quantities are spilt along the roads and paths. Some of the chief embankments swarm with rats and mice, which must pick up a very good living at this time of the year. Other creatures also take toll from the harvest, especially the *Fòdy*, or cardinal-bird, the bright scarlet plumage of the cock-bird making a very noticeable feature of the avi-fauna during the warmer months. This colour is not seen on the wings, which are sober brown, but is brilliant on head, breast and back ; it fades away in the winter months, returning again as the breeding-time comes round. The white egret, which we saw on the coast, is equally in evidence in Imèrina, and sometimes flocks of two or three hundred of them may be seen in the rice-fields and marshes. When living at Ambòhimànga we used to notice that in the winter months a large number of the *Vòrompòtsy* were accustomed to assemble on the open down towards sunset ; and on a signal apparently given by one of them the whole flock rose and flew slowly away to roost in the large trees to the north-west of the town. The white-necked crow is also plentiful, and is perhaps the most commonly seen bird in Imèrina. On one occasion when walking with a friend near Ambòhimànga, he had his gun and shot one of a small flock of crows near us. For a few seconds there was a dead silence, and then all the others filled the air with hoarse cries and came dashing round us so closely that I feared they would injure our eyes, so angry did they seem with those who had killed their companion. One of the most beautiful birds to be seen is the *Vintsy*, or kingfisher, of lovely purplish-blue, with yellow and buff breast and belly. With short blunt tail and long beak, it may be seen perched on the rushes or other aquatic plants, or darting over the streams and marshes, flying in a curious jerking manner, like a flash of purple light, pursuing the insects which form its food.

From what has been already said about rice-culture it may be easily understood that it occupies a large amount of the time and attention of the Malagasy. The digging and preparation of the ground ; the sowing in the *kètsa* plots ; the uprooting of

the young plants ; the planting, by the women, of these again in the soft mud of the rice-fields ; the bringing of water, often from a long distance, to the fields, and the repairing of the water-courses ; the weeding of the rice-fields ; and, finally, the cutting, the threshing, the bringing home, and the drying and storing of the rice—all this bulks largely in their daily life through a good deal of the year. Rice is the staff of life to the Malagasy, and they cannot understand how Europeans can make a proper meal without it. *Mihìnám-bàry*, “to eat rice,” is the native equivalent for the Eastern phrase, “to eat bread” ; they eat other things of course—manioc root, a little meat or fish, and various vegetables, but these are only *laoka* or accompaniments to the staple food.

The Malagasy have a saying, when speaking of things which are inseparable, that they are “like rice and water.” And when we remember that rice is sown on water, that it is transplanted in water, that it grows still in water, that it is reaped in water, that it is usually carried by water, in canoes, that it is boiled in water, and that water is generally the only beverage with which it is eaten, it will be seen that there is much force in the comparison.

Besides the above-mentioned additions to rice, the people eat as a relish with it other things, many of them very repulsive to our European notions—for instance, snails, locusts, certain kinds of caterpillars, moths, and even, so it is said, some species of spiders ! But I never realised so distinctly what queer things they will eat as when taking a ride one afternoon to the north of Ambòhimànga. Passing along one of the long rice-valleys, we saw some girls dredging for fish in the shallow water ; and thinking we might perhaps buy some to take home, we called to them to bring the basket for us to see. They immediately complied, but, on inspecting the contents, we found no fish, but a heap of brown, crawling, wriggling, slimy creatures, really very disgusting in appearance, considered as possible articles of food. This mass of creeping animal life consisted of shrimps, water-beetles, tadpoles, and the larvæ of many kind of insects. It is needless to say that we did *not* make a purchase of these tempting delicacies ; but I believe they would all go into the pot in some Malagasy house that evening and give a relish to the rice of some of our native friends.



ON THE COAST LAGOONS

Fish traps. The way is blocked for fish with occasional openings for traps

The rivers of the interior are singularly deficient in fish of any size ; but in the shallow water of the rice-fields numbers of minute shrimps are caught, as well as small fish of the kinds called *Tôho* and *Tròndro*, but they are very bony and poor in flavour : somewhat larger kinds, called *Màrakèly* and *Tôhovòkoka*, are, however, very good eating, but are not plentiful. Very large and fine eels are caught in the rivers, as well as crayfish, of a kind peculiar to Madagascar. On the water of the streams many kinds of water-beetles and water-boatmen may be seen darting about in mazy circles ; one of these, called *Tsingàla*, causes death if swallowed by cattle or human beings, oxen dying in less than twenty-four hours, unless a remedy is promptly given. The Rev. H. T. Johnson wrote thus about this insect :

“I was travelling one day to Ambòhimandròso; the day had been very hot, and passing by a dirty pool, one of my bearers stooped down and drank with his hands and then hastily followed to carry the palanquin. I saw the man drink and presently, hearing sounds behind, I turned and discovered that the very man, who only a few minutes before had drunk the water, was now in agonies of pain. He stood stretching out both his arms and throwing back his head in a frantic manner, at the same time shrieking most hideously. My first thoughts were speedily seconded by the words of his companions, who said, ‘He has swallowed a *tsingàla*.’ Of course, I immediately got down and went back to the poor fellow. He was now lying on the ground and writhing in agony, and I felt that unless something could be done, and that speedily, the man must die. My other bearers, seeing the extreme urgency of the case, called to the passers-by, but none could render any assistance. Presently a Bétziléo was appealed to, and he said that he knew what would cure him, but wanted to know how much money we would give. I said immediately that it was no time for bargaining, but that I would give him sixpence if he relieved the poor man from his sufferings. Off he ran to procure some leaves, with which he returned in about ten minutes ; he soaked them in water from a stream close by, and then gave the sufferer the infusion to drink. With almost the quickness of a flash of lightning the poor fellow showed signs of relief, and after drinking this infusion several times more he said

that he was free from pain, but felt very weak and faint. It was some weeks before the man got thoroughly strong again."

No one can pass along the little narrow banks and paths which divide the rice-fields without noticing the large dragonflies which dart over the water. Their colours are very various. A rich crimson, steely-blue and old gold are some of these. They are voracious creatures, as their name implies, and I saw one, one day, deliberately, and audibly, crunching up a smaller one. At another time, however, I noticed a fair-sized one being devoured by a spider, which was barred with lines like a zebra.

The marshes in Imèrina are not useless to the people, for a variety of useful plants grow there and are also planted in them. Among these are the *Hèrana*, a sedge which grows to three or four feet in height, and is extensively used for thatching native houses. If the roof is a proper pitch this sedge is very durable, and when cut and trimmed has a very neat appearance. Then there is the *Zozòro*, a much taller sedge, closely allied to the papyrus, with a triangular stem, and a feathery head of flowers. The strong tough peel is used to make the excellent mats employed for flooring, and also all sorts and sizes of baskets; the pith is used for stuffing pillows and mattresses; and the stems firmly fixed together are used for temporary doors and window shutters, and for beds. A rush, called *Hàzondràno*, is employed for making baskets and mats.

As the colder weather advances, the mornings are often foggy, at least a thick white mist covers the plains and valleys soon after the sun rises and remains for an hour or two until his increasing power disperses it. Seen from the higher grounds and from the most elevated parts of the capital, this mist often presents a very beautiful appearance; a billowy sea of vapour is brilliantly lit up by the sunlight, and out of this sea the hill-tops rise up like islands. But these misty mornings also reveal many things which cannot be seen, or can only be seen by very close observation, in clear sunshine, especially the webs of various species of spider. There they are all the time, but we are not aware of their presence except on a misty autumn or winter morning, when a very delicate thread and filmy net is marked out by minute drops of moisture which reveal all their

wonderful beauty of structure. Many kinds of bush are seen to be almost covered by geometrical webs : one species seems to choose the extremities of the branches of the *sôngosôngo Euphorbia*, but the most common is a web averaging five or six inches in diameter which is spread horizontally on tufts of grass, and may be seen by thousands, half-a-dozen or so in a square yard. This web has a funnel-shaped hole near the centre, with a little shaft leading down to the ground. Near this, the maker and tenant of the structure—a little greyish-brown spider about half-an-inch long—may often be found, if carefully searched for. As the sun gains power, these numerous webs become almost invisible, but before the moisture is all dried from them, they present a beautiful appearance in the sunshine, for they are exactly like the most delicate gauze, studded with numberless small diamonds, flashing with all the prismatic colours as we pass by and catch the light at varying angles.

The most conspicuous of the many species of spider seen in Madagascar is a large *Nephila*, a creature about an inch and a half long, with a spread of legs six or seven inches in diameter. It is handsomely marked with red and yellow, and may be noticed by scores in the centre of its geometric web stretching across the branches of trees. From the considerable distances spanned by the main guys and supports of its great net, this spider is called by the Malagasy *Mampita-hàdy*, or “fosse crosser”; and these main lines are strong enough to entangle small birds, for at the mission station at Ambàtoharàna a cardinal-bird and a kingfisher were both caught in these nets. The male spider is only about a quarter the size of the female as just described, and, sad to say, he frequently is caught and devoured by his affectionate spouse, after mating. Attempts have been made, and with some success, to employ the silk made by this spider in the manufacture of a woven fabric ; but it is very doubtful whether such silk could be procured in such quantities as to be of commercial value.

Silk from the silkworm moth is produced to a considerable extent, and, as we have seen in speaking of native weaving, is employed in manufacturing a variety of handsome *làmbas*. The moth is a large and beautiful insect, with shades of buff and brown and yellow, and with a large eye-like spot on the hind wings. The caterpillars are fed on the leaves of the mulberry-

trees and also on those of the *tapia* (*Chrysopia* sp.) shrub. Another moth, somewhat like the silk-producing one in colouring, has an extraordinary development of the hind wings, which have long delicate tail-like appendages; these have extremely narrow shafts and are enlarged at the ends. Their points have two spiral twists or folds, very graceful in appearance. There are four distinct eye-like spots near the centre of each wing, which are light buff in colour, with lemon-yellow. The insect measures eight and a half inches from shoulder to point of tail, and eight inches across the upper wings. It is allied to *Tropæa leto*. Some species of moth, very dark brown in colour, and yet beautifully marked, often fly into our houses at night, the female being much larger than the male. The Malagasy are afraid of seeing these almost black-looking insects, which they call *lòlom-pàty* ("death-moths"), in their houses, as they think them presages of evil and death. Another moth, with death's-head marking on its thorax, is also often seen. But the most beautiful of the Malagasy lepidoptera is a diurnal moth, which one would always call a butterfly—viz. the *Urania riphæa*, a large and lovely insect, with golden-green, crimson and black markings, and edged all round its wings and tails with delicate pure white. It is a curious fact that the nearest ally to this Madagascar species is a native of Hayti and Cuba (*U. sloana*), a remarkable instance of discontinuity of habitat. This fact, however, has a parallel in the family of small insectivorous animals called *Centelidæ*, which are also confined to Madagascar and some of the West India islands. During 1899 this butterfly was unusually abundant, while in some seasons it is seldom seen. At Isoàvina I noticed a great many flying around the tall blue-gum trees in the dusk of the evening. Great numbers also were seen at Ambòhimànga in the garden there. They appeared to be intoxicated with the strong flavour of the nectar from the loquat-trees, then in flower, so that almost any quantity of them could have been captured in the early morning, while still under the influence of the flowers, which have a powerful scent of prussic acid. The Malagasy call it *Andriàndòlo*—i.e. "king-butterfly."

In these bare upper highlands of Madagascar butterflies are not found in as great variety as in the warmer regions of the island. Still there are a few species which are common enough,

GRASSHOPPERS, CRICKETS AND LOCUSTS 111

the most plentiful being one which is satiny-blue above and spotted with brown and grey underneath. This is to be seen all the year round, especially hovering over the euphorbia hedges which divide plantations from the roads. Another, also tolerably common, is a large reddish-brown butterfly, the wings edged with black and white. More rare is an insect with four large round white spots on dark chocolate-brown wings ; and another, dark brown in colour, with eye-like spots of blue and red. Several small species, yellow, white, or brown, or silvery-grey and blue, are found hovering over, or settling on, damp places ; and there are two or three white species, with black spots or lines on the edges of the wings. In the warmer season a handsome large *Papilio* is rather common in our gardens, with dark green and sulphur-yellow spots and markings. The eggs of some of these are beautiful objects in the microscope, being fluted and sculptured like a Greek vase. My friend, M. Ch. Matthey, who has made large collections of Madagascar insects, tells me that there are a few cases of mimicry and dimorphism, especially the latter, among the butterflies of the interior.

On the open downs, and when the sun is shining, the air is filled with the hum of chirping insect life from the many species of grasshoppers, crickets and small locusts which cover the ground. Every step among the long dry grass disturbs a score of these insects, which leap in all directions from one's path as we proceed, sometimes dashing on one's face with a smart blow. The majority of these are of various shades of brown and green, and some of the larger species of grasshopper are remarkable for their protective colouring. Here is one whose legs and wings are exactly like dry grass ; the body is like a broad blade of some green plant, the antennæ are two little tufts, like yellow grass, and the eyes are just like two small brown seeds. But, curiously enough, when it flies, a pair of bright scarlet wings make its flight very conspicuous. You pursue it, to catch such a brightly coloured insect, when it settles, and lo ! it has vanished, only something resembling green or dry grass remains, which it requires sharp eyes to distinguish from the surrounding herbage. Other grasshoppers are entirely like green grass blades and stalks, and others again resemble, equally closely, dried grass ; and unless the insects move under one's eyes it is almost impos-

sible to detect them. One is puzzled to guess where the vital organs can be placed in such dry-looking little sticks. There is one species of mantis also, which, in the shape and colour of its wings, legs, antennæ and body, presents as close a resemblance to its environment as do the grasshoppers. Their curious heads, however, which turn round and look at one in quite an uncanny manner, and their formidably serrated fore legs or arms, put up in mock pious fashion, give them a distinctly different appearance from the other insects. In the dry and cooler season on almost every square foot of ground is a large brown caterpillar, often many of them close together, feeding on the young blades of grass.

But the most handsome insect one sees on the downs is the *Valàlanambòà* or dog-locust. This is large and is gorgeously coloured, the body being barred with stripes of yellow and black, while the head and thorax are green and blue and gold, with shades of crimson, and the wings are bright scarlet. It seems a most desirable insect for a cabinet, but it is impossible to keep one, for it has a most abominable smell, and this appears to be its protection, as well as its probable possession of a nauseous taste, so that no bird or other creature feeds upon it. This insect seems therefore a good example of "warning colours"; it has no need of "protective resemblance" lest it should be devoured by enemies; it can flaunt its gay livery without fear, indeed this seems exaggerated in order to say to outsiders, "Hands off!" "*Nemo me impune lacessit.*" The Malagasy have a proverb which runs thus: "*Valàlanambòà : ny tompony aza tsy tia azy*"—i.e. "The dog-locust, even its owner dislikes it."

On the Imèrina downs, and on the outskirts of the forest, there are occasionally seen some enormous earth-worms. These are about four times the size, both in length and thickness, of those we see in England; and when I first saw a small group of them they seemed more like small serpents than worms. Darwin's researches on the part played by earth-worms in the renewal of the soil have shown us what a valuable work these humble creatures do for our benefit; and on a morning after a little rain has fallen the grass here in Imèrina is sometimes almost covered by the innumerable little mounds of fresh earth brought up by worms, thus confirming what he has told us about them.



TRANSPANTING RICE

The women always do this. The men, on the left, are digging up and working the clods into soft mud with long-handled spades

The aspect of vegetation, except in the rice-fields, can hardly be said to change much during the autumn months. A plant with pale yellow flowers may be noticed by thousands in marshy grounds, giving quite a mass of colour in many places. A significant name given to autumn is *Ménàhitra*—i.e. “the grass is red”—that is, turning brown.

WINTER: MAY, JUNE, JULY AND AUGUST.—As already mentioned in the introductory sentences of the previous chapter, winter in central Madagascar is very different from winter in England. We have no snow, nor is there any native word for it, for even the highest peaks of Ankàratra are too low for snow to fall on them; we never see ice (although adventurous foreigners have once or twice seen a thin film of it on pools on the highest hillsides); hoar-frost, however, is not uncommon, and occasionally the leaves of some species of vegetables, as well as those of the banana, turn black with the keen night air. And since there is no rain during our Imèrina winter, the paths are dry, and it is the best time for making long journeys, especially as there is little to be feared from fever when going about at this season of the year. Winter is therefore a pleasant time; the skies are generally clear, the air is fresh and invigorating, and to the cool and bracing temperature of the winter months is doubtless largely due the health and strength which many Europeans enjoy for years together in the central provinces of Madagascar.

The long period without rain at this season naturally dries up the grass, and the hills and downs become parched and brown. *Maintàny*—i.e. “the earth is dry”—is one of the native names for this season, and it is very appropriate to the condition of things in general. The rice-fields lie fallow, affording a scanty supply of grass for the cattle; and many short cuts can be made across them in various directions, for the beaten track over embankments, great and small, may be safely left for the dry and level plain.

In travelling about Imèrina, and indeed in the southern central provinces as well, one cannot help noticing the evidences of ancient towns and villages on the summits of a large number of the high hills. These are not picturesque ruins, or remains of buildings, but are the deep fosses cut in the hard red soil, often three or four, one within the other, by which these old

villages were defended. These show very conspicuously from a great distance, and are from ten to twenty feet deep ; and as they are often of considerable extent they must have required an immense amount of labour to excavate. These elaborate fortifications are memorials of the " feudal period " in central Madagascar, when almost every village had its petty chief or *mpanjaka*, and when guns and gunpowder were still unknown. These old places are now mostly abandoned for more convenient positions in the plains or on the low rising grounds ; and the fosses or *hady* are often capital hunting-grounds for ferns and other wild plants.

Perhaps more noticeable even than the old towns are the old tombs, as well as more modern ones, which meet one's eye in the neighbourhood of every village. The Hova tombs are mostly constructed of rough stonework, undressed and laid without mortar ; they are square in shape, from ten to twenty feet or more each way, and generally of two or three stages of three to four feet high, diminishing in size from the lowest. This superstructure surrounds and surmounts a chamber formed of massive slabs of bluish-grey granitic rock, partly sunk in the ground, and partly above it. In this chamber are stone shelves, on which the corpses, wrapped in a number of silk cloths or *lamba*, are laid. The tombs of wealthy people, as well as those of high rank, are often costly structures of dressed stonework, with cornices and carving ; some are surmounted with an open arcade, and have stone shafts to carry lightning conductors. Within the last few years some large tombs have been made of burnt brick (externally), although no change is made in the ancient style of interior construction, with single stones for walls, roof, door and shelves. Near some villages are a large number of these great family tombs ; and at one place, on the highroad from the present to the old capital, a long row of such tombs, from thirty to forty in all, may be seen. In many places a shapeless heap of stones, often overshadowed by a *Fàno* tree, resembling an acacia, marks a grave of the Vazimba, the earlier inhabitants of the country. These are still regarded with superstitious dread and veneration by the people, and offerings of rice, sugar-cane and other food are often placed on them.

The winter months are a favourite time for the native custom of *ʃamadihana*—that is, of wrapping the corpses of their deceased relatives in fresh silk cloths, as well as removing some of them to a new tomb as soon as this is finished. These are quite holiday occasions and times of feasting and, not infrequently, of much that is evil in the way of drinking and licentiousness.

CHAPTER IX

AUTUMN AND WINTER

OTHER noticeable objects when travelling about the central provinces are tall stones of rough undressed granite, from eight to twelve feet high, called *Vàtolàhy* (i.e. "Male stones"), which have been erected in memory of some bygone worthy, or of some notable event, now forgotten, and which often crown the top of prominent hills. They are also sometimes memorials of those who went away to the wars of olden times, and who never returned to their homes. In these cases a square of small stones—at least three sides of one—is formed as part of the memorial, as a kind of pseudo-tomb. These little enclosures are from eight to ten feet square. A wonderful variety of lichens is often to be seen on these tall stones—red, yellow, grey of many shades, black, and pure white embroidering the rough stone. Some have supposed, from the name of these memorials, that we have here a relic of phallic worship.

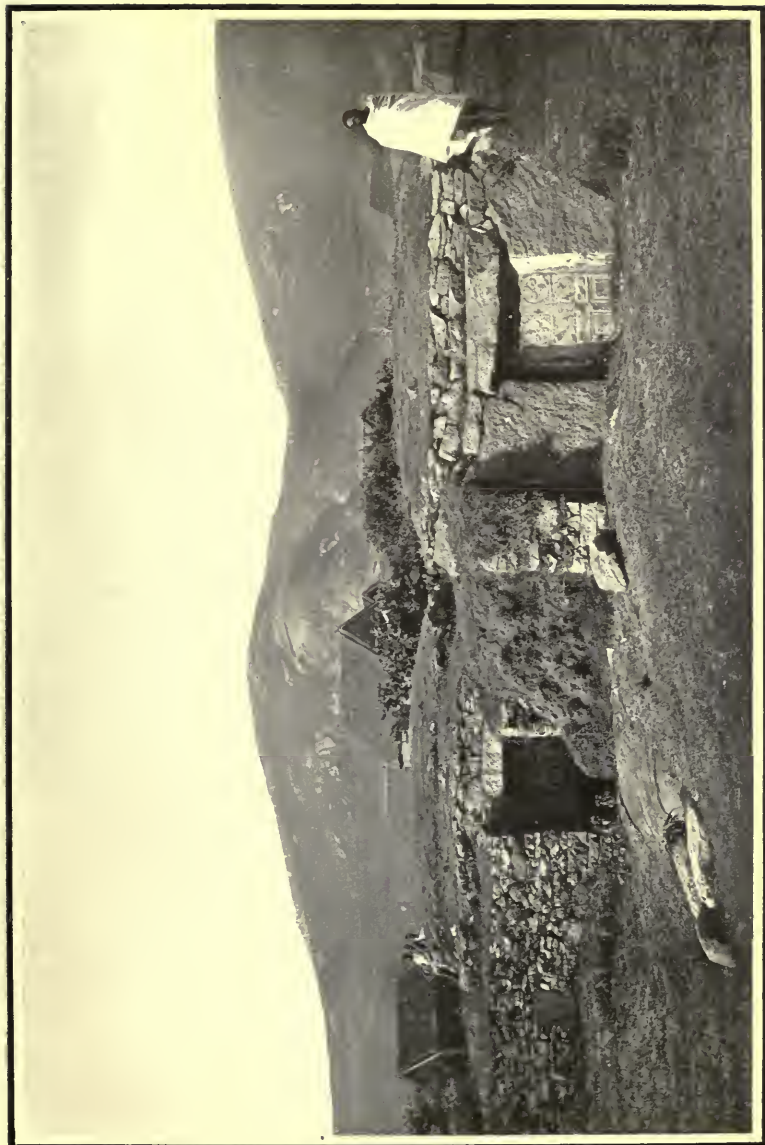
A very prominent feature of the social life of the Malagasy is the system of holding large open-air markets all over the central province on the various days of the week. The largest of these is naturally that held in the capital every Friday (*Zomà*), at which probably from twenty thousand to thirty thousand people are densely crowded together, and where almost everything grown or manufactured in the province can be purchased. But two or three of the other markets held within five or six miles of Antanànarivo do not fall far short of the *Zomà* market in size, especially those at Asabòtsy (Saturday) to the north, and at Alàtsinainy (Monday) to the north-east. To a stranger these great markets present a very novel and interesting scene, and a good idea may be obtained as to what can be purchased here by taking a stroll through them and noticing their different sections. In one part are oxen and sheep, many of which are killed in the morning, while the meat is cut up and sold during

the day ; here are turkeys, geese, ducks and fowls by the hundred ; here are great heaps of rice, both in the husk, and either partially cleaned, as "red rice," or perfectly so, as "white rice" ; here are piles of brown locusts, heaps of minute red shrimps, and baskets of snails, all used as "relishes" for the rice ; here is *màngahàzo*, or manioc root, both cooked and raw, as well as sweet potatoes, earth-nuts, arum roots (*saonjo*) and many kinds of green vegetables, and also capsicums, chillies and ginger. In another quarter are the stalls for cottons and prints, sheetings and calicoes from Europe, as well as native-made cloths of hemp, *rofia* fibre, cotton and silk ; and not far away are basketfuls and piles of snowy or golden-coloured cocoons of native silk for weaving. Here is the iron-mongery section, where good native-made nails, rough hinges, and locks and bolts, knives and scissors can be bought ; and formerly were the sellers of the neat little scales of brass or iron, with their weights for weighing the "cut money," which formed the small change of the Malagasy before foreign occupation. (The five-franc pieces were cut up in pieces of all shapes and sizes, so that buying and selling were very tedious matters.) Then we come to the vendors of the strong and cheap mats and baskets, made from the tough peel of the *zozòro* papyrus, and from various kinds of grass, often with graceful interwoven patterns. Yonder a small forest of upright pieces of wood points out the timber market, where beams and rafters, joists and boarding can be purchased, as well as bedsteads, chairs and doors. Not far distant from this is the place where large bundles of *hèrana* sedge, arranged in sheets or "leaves," as the Malagasy call them, for roofing, can be bought ; and near these again are the globular water-pots or *siny* for fetching and for storing water. But it would occupy too much space to enumerate all the articles for sale in an Imèrina market. Before the French occupation it was not uncommon to see slaves exposed for sale, but happily that and slavery are now things of the past.

In the old times of Malagasy independence there were few more interesting scenes than that presented by a great national assembly or *Kabàry*. These were summoned when new laws were made, or a new government policy was announced, and also when war was imminent with France, both in 1882 and again in 1895. On such occasions the large triangular central

space near the summit of the capital, called Andohàlo, was filled with many thousands of people from early morning. Lines of native troops kept open lanes for the advance of the queen's representative, generally the Prime Minister, who was always attended by a number of officers in a variety of gorgeous uniforms. At the eastern or highest portion of Andohàlo a place was kept open for the royal messengers, whose approach was announced by the firing of cannon. Taking his stand so as to be seen by the vast assembly, the Prime Minister would draw his sword and commence the proceedings by turning towards the palace and giving the word of command for a royal salute, all the troops presenting arms, and all the cannon round the upper portion of the city being fired. The next officer in rank then took the word, and the troops all saluted the Prime Minister, who stood bareheaded, acknowledging the respect due to his high position. He then proceeded to give the royal message, or read the new laws, often with a great deal of eloquence, for the Malagasy are ready and clever speakers. At passages where the national pride or patriotism was touched, much enthusiastic response was often aroused, especially as each paragraph of the speech was followed by a question: "*Fa tsy izày, va, ry ambànìlànitra?*" ("For is it not so, ye 'under-the-heaven' ?") These questions were replied to with shouts of "*Izày!*" ("It is so!") from the assembled multitude. But the greatest pitch of loyal enthusiasm was generally evoked by the chiefs of the different tribes, as they, one after another, replied to the queen's message and gave assurances of obedience and loyalty. Surrounded by a small group of their fellow-clansmen, they would wind their *làmba* round their waists, brandish a spear, and at the conclusion of each part of their speech they also demanded: "*Fa tsy izày va?*" And sometimes the whole of the people would leap to their feet, the officers waving their swords, the soldiers tossing up their rifles, and the people dancing about in a perfect frenzy of excitement.

We noticed just now the signs of the ancient villages and towns in the central province; but something may be added here as to the existing villages we see as we travel through it. The ancient towns were, as we have seen, all built for safety on the top of hills, and many of those now inhabited by the people are still so situated, although in several districts the



Hova TOMBS CLOSED WITH HUGE STONE DOORS

The bare, rocky hills are characteristic of the interior of Madagascar

French authorities have obliged them to leave the old sites and build their houses, with plenty of space round each, on the sides of the newly made roads. But a good number of the old style of village still remain, and it is these I want to describe. They mostly have deep fosses, cut in the hard red soil, surrounding them, about twenty to thirty feet across, and as many feet deep, sometimes still deeper; and before guns and cannons were brought into the country they must have formed very effective defences against an enemy, especially as there is often a double or even treble series of them. The gateways, sometimes three deep, are formed of stone, often in large slabs, and instead of a gate a great circular stone, eight or ten feet in diameter, was rolled across the opening and was fitted into rough grooves on either side, and wedged up with other stones inside the gate. I have slept in villages where it was necessary to call several men before one could leave in the morning, until they had answered our inquiry: "Who shall roll us away the stone?" In these fosses, which are of course always damp, with good soil, ferns and wild plants grow luxuriantly; and the bottom forms a plantation in which peach, banana, guava and other fruit trees are cultivated, as well as coffee, arums and a variety of vegetables. Tall trees often grow there, so that these *hàdy* or fosses are often the prettiest feature of the village. It must be added that the paths between and leading to the gateways are often winding, and formed by a thick mass of prickly plants.

In some parts of the central provinces the villages have no deep trenches round them, but they are protected by a dense and wide plantation of prickly pear. The thick, fleshy, twisted stems, the gaily tinted flowers, and even the fruits, are all armed with spines and stinging hairs; and it is no easy matter to get rid of the minute little needles, if they once get into one's skin. So one sees that a thick hedge of prickly pear was a very effectual defence against enemies, especially since the people wore no shoes or any protection for legs and feet. In many places, instead of prickly pear, the fence round the village is made of *tsiàfakòmby* ("impassable by cattle"), a shrub with bright yellow flowers and full of hook-like prickles. In some cases, instead of a door at the gateway, a number of short poles are hung from a cross-piece at the top, which passes through

a hole in each of them ; and one has to hold up two or three poles in order to pass through.

Here, however, we are at last inside the village, and we see at once that it is a very different place from an English village, with the turnpike road passing through it, its trim houses and cottages, with neat gardens and flower-beds, its grey old church, and its churchyard with elms and yews overshadowing the graves.

There is nothing at all like this in our Malagasy village. There are no streets intersecting it, and the houses are built without much order, except in one point—namely, that they are almost all built north and south, and that they have their single door and window always on the west side, so as to be protected from the cold and keen south-east winds which blow over Imèrina during a great part of the year. The houses are mostly made of the hard red earth, laid in courses of a foot or so high. They are chiefly of one storey and of one room, but they generally have a floor in the roof, which is used for cooking ; and, if of good size, they are sometimes divided into two rooms by rush and mat partitions. On the east of Imèrina, near the forest, the houses are made of rough wooden framing, filled up with bamboo or rush, and often plastered with cow-dung. In the neighbourhood of the capital, and indeed in most places, the houses are now often made of sun-dried bricks, in two storeys, with several rooms, and often with tiled roofs.

Here and there throughout the province one comes across a village which was formerly the capital of a petty kingdom, where we find several strong and well-built timber houses. Such a place was Ambòhitritankàdy (I say “was,” because it now no longer exists), one of the villages in my mission district. It was on a high hill, and in the centre of the village were ten large houses of massive timber framing and with very high-pitched roofs, with long “horns” at the gables, and these were arranged five on each side of a long oblong space sunk a couple of feet below the ground. Here, in former times, bull-fights took place, and various games and amusements were carried on. One of the houses, where the chief himself resided, was much larger than the rest, and the corner posts, as well as the great central posts supporting the ridge, were very massive pieces of timber. It was all in one great room, without any partitions, the whole



FRIDAY MARKET AT ANTANANARIVO

This was before the French Conquest. Note the different types of houses, tiled and thatched

being well floored with wood, and the walls covered with fine mats. Similar houses might be seen at most of the chief towns of Imèrina ; but the house I have just described was the largest and finest of any, not excepting those in the capital and at Ambòhimànga. Sad to say, except at these two places, where two ancient timber houses at the first one, and one at the other, are still preserved as a kind of curiosity, almost all these fine structures have been demolished in order to get well-seasoned timber for furniture and buildings. They have been superseded by much less picturesque, but perhaps more comfortable as well as cheaper, houses of sun-dried or burnt brick.

There is no privacy or retirement about the houses in the village, no back-yard or outbuildings, although occasionally low walls make a kind of enclosure around some of them. Here and there among the houses are square pits, four or five feet deep, and eight or ten feet square, called *jàhitra*. These are pens for the oxen, which are kept in them to be fattened, formerly especially for the national festival of the New Year. As may be supposed, these are very dirty places, and in the wet season are often just pools of black mud ; indeed the village, as a whole, is anything but neat and clean. All sorts of rubbish and filth accumulate ; there are no sanitary arrangements ; frequently the cattle used to be penned for the night in a part of the village, and the cow-dung made it very muddy in wet weather, and raised clouds of stifling dust when it was dry. Frequently the cow-dung is collected and made into circular cakes of six or eight inches diameter, which are then stuck on the walls of the houses to dry. This is used as fuel for burning ; and splitting off large slabs of gneiss rock, which are employed by the people in making their tombs.

In the centre of the village may often be seen the large family tomb of the chief man of the place, the owner of much of the land and many of the neighbouring rice-fields. If he is an andriana, or of noble birth, the stonework is surmounted by a small wooden house, with thatched or shingled roof, and a door, but no window. This is called *tràno màsina*, "sacred house," or *tràno manàra*, "cold house," because it has no hearth or fire.

Seen from a distance, these Malagasy villages often look very pretty and picturesque, for "distance lends enchantment to the

view." Round some of them tall trees, called *àviàvy*, a species of *figus*, grow, which are something like an English elm in appearance. In others one or two great *amòntana* trees may be seen ; these are also a species of fig-tree, and have large and glossy leaves. The *amòntana* is evergreen, while the *àviàvy* is deciduous. A beautiful tree, called *zàhana*, is also common, with hundreds of pink flowers and sweetish fruit like a pea-pod. In the fosses is often seen the *amiana*, a tall tree-nettle, with large deeply cut and velvety leaves with stinging hairs. Many kinds of shrubs often make the place gay with flowers, especially in the hot season.

But what are the Hova children like ? How are they dressed ? And what do they play at ? They are brown-skinned, some very light olive in colour, and some much darker. As a rule they have little clothing ; perhaps some of the boys may have a straw hat, but no shoes or stockings, and they are often dirty and little cared for. On Sundays and on special occasions the girls are often dressed in print frocks, and the boys in jackets of similar material, and with a clean white calico *làmba* overall ; but on weekdays a small *làmba* of soiled and coarse hemp cloth often forms almost their only clothing. Of course the children of well-to-do people are sometimes very nicely dressed, although they too often go about in a rather dirty fashion. I am here, however, speaking of the majority of the children one sees, those of the poorer children of a village.¹ One day some of us went for a ride to a village about two miles from Ambòhimànga. A number of children followed us about as we collected ferns in a *hàdy*, and, as a group of seven or eight of them sat near us, we calculated that the value of all they had on would not amount to one shilling !

Poor children ! they have little advantages compared with English boys and girls, and they have few amusements. They sometimes play at a game which is very like our " fox and geese " ; the boys spin peg-tops and play at marbles ; the little children make figures of oxen and birds, etc., out of clay ; the boys are fond of a game resembling the lassoing of wild oxen, by trying to catch their companions by throwing a noose over them ; and the big boys have a rough and violent game called *mamèly dîa mànga*, in which they try to throw an opponent down by kicking backward at each other, with the sole of the

foot, which is darted out almost as high as their heads. Ribs are sometimes broken by a violent kick. Perhaps the most favourite amusement of Malagasy children is to sit in parties out of doors on fine moonlight nights and sing away for hours some of the monotonous native chants, accompanying them with regular clapping of hands.

In about a fourth of these villages, where there are churches, a mission day school is still carried on, and here may be seen, if we look in, a number of bright-looking children repeating their *a, b, d* (not *c*), reading and writing, doing sums, learning a little grammar and geography, and being taught their catechism, and something about the chief facts and truths of the Bible. And perhaps there is no more pleasant sight in Madagascar than one of the larger chapels on the annual examination day, filled with children from the neighbouring villages, all dressed in their best, eager to show their knowledge, and pleased to get the Bible or Testament or hymn-book or other prize given to those who have done well.

A few words may be said here about the aspect of the heavens in Imèrina, especially at evening and night. We are highly favoured in having sunsets of wonderful beauty ; the western sky burns with molten gold, orange and crimson ; and as the sun nears the horizon, the ruddy landscape to the east is lighted up more and more intensely every moment with glowing colour, the natural hue of the soil being heightened by the horizontal rays ; the distant lines of hill, range after range, are bathed in every shade of purple light, and the long lines of red clay walls glow like vermilion in the setting sunshine. How often have we watched this glorious display of light and colour, and thanked God for this beautiful world !

But the nights, especially near the time of full moon, are also very enjoyable. The moon appears more brilliant and her light more intense than in England ; it is a delight to be out of doors and to walk in the fresh bracing air, and to have the rough paths illuminated for us by the silvery radiance, which gives a picturesque beauty to the most commonplace objects and scenes.

Perhaps the starlit skies of the evenings of the summer months are the most beautiful of all the year. At this season some of the finest of the northern constellations are seen at the same time as several of the southerly ones. The Great Bear

stretches over the northern sky ; higher up is the Northern Crown ; the Pleiades,² and Orion with his many brilliant neighbours, are overhead ; the Southern Cross, with its conspicuous "pointers" in the Centaur, is high in the southern heavens ; and the Magellan Clouds are clearly seen nearer the horizon ; and all across the firmament is the Galaxy, or, as the Malagasy call it, the *èfi-taona*, "the division," or "separation of the year." And then, as the circling year revolves, the great serpentine curve of Scorpio appears, and Sirius, Capella, Canopus, and many another glorious lamp of heaven light up the midnight sky with their flashing radiance.

The month of August, the closing one in this review of the year, is often the coldest month of all, cold, that is, for a country within the tropics. All through August the keen south-eastern trades generally blow strong, and although in sheltered places the afternoon sun may be quite warm, the mornings and evenings are very cold, and during the night the mercury will often descend to very near the freezing-point. The mornings are frequently misty ; on some days there are constant showers of *èrika* or drizzly rain, alternating with bright sunny days and clear skies ; these latter seem the very perfection of weather, bracing and health-giving. But this cold weather often brings disease to the Malagasy, especially a kind of malarial fever, which sometimes attacks great numbers of them, and also brings affections of the throat and chest, to which many fall victims. At such times their thin cotton clothing seems ill adapted for protection against the climate. This circumstance has often struck me as showing how difficult it is to change the habits of a people ; for centuries past the Hova have lived in this cool highland region, yet, until very lately, few comparatively have made much change in their dress, which was well enough adapted for the purely tropical region from which they originally came, but very unfitted for the cool air of the winter months of a country about five thousand feet above sea-level.

The great rice-plain to the west of the capital and all the broader valleys still lie fallow, although in various places extensive sheets of water show that irrigation is commencing. In the lesser valleys and at the edge of the larger rice-plains the landscape is enlivened by the bright green of the *kètsa* grounds,



AN ANCIENT VILLAGE GATEWAY

A tall palanquin bearer is in front, showing by comparison the height of the gateway. A native wooden house with high-pitched *hèrané* thatched roof is shown, and a group of natives

where, as already described, the rice is sown broadcast before transplanting into the larger fields.

There are not many deciduous trees in Imèrina, so the numerous orchards, chiefly of mango-trees, look fresh and green throughout the year. But the Cape lilac, which does cast its leaves, is beginning to put out its bright green fronds; the peach-trees are a mass of pink blossom, unrelieved as yet by any leaves, and the *sòngosòngo* (*Euphorbia splendens*), in the hedges is just beginning to show its brilliant scarlet or pale yellow bracts. Wild flowers are still scarce, but the lilac flowers of the *sèvabé* (*Solanum auriculatum*) bloom all through the year. The golden-orange panicles of the *sèva* (*Buddleia madagascariensis*), which has a sweetish scent, now appear. Nature is arousing from the inaction of the cold season, and the few trees now flowering give promise of the coming spring. And so, from year to year, every month brings some fresh interest in tree and flower, in bird and insect, in the employments of the people, and in the changing aspects of the sky by day and in the starry heavens by night.

NOTE.—I may add here that of late years, through foreign influence preceding and following the French occupation, many new trees have been introduced into Madagascar, which have materially altered the look of the country in some provinces, especially in the Bètsiléô district. Millions of trees, chiefly species of eucalyptus, have been planted, especially along the roadsides, as well as mimosa, blackwood and *filao*. The beautiful purple bracts of the bougainvillea, and the large brilliant scarlet ones of the poinsettia, now give a much brighter appearance to gardens and public places, since they have been extensively planted in the capital and other large towns, as well as zinnias, crotons and cannas.

¹ Of late years, since numbers of children attend Government schools as well as those of the various missions, a considerable improvement has taken place in children's clothing. Knickerbockers and jackets are now the dress of hundreds of boys; but the native *làmba* is still largely used, and is almost always part of girls' dress.

² Curiously enough, the Malagasy appear to have given names only to these two prominent clusters of stars. The Pleiades they call *Kòtokèli-miàdi-laona*—*i.e.* "Little boys fighting over

the rice mortar"; while the three stars of Orion's belt they call "*Tèlo-no-ho-réfy*"—*i.e.* "Three make a fathom." They have no name for the first-magnitude stars, or for the planets, except for Venus, as a morning star—viz. "*Fitàrikàndro*"—*i.e.* "Leader of the day."

CHAPTER X

AT THE FOREST SANATORIUM

BY the kind concern of two of the missionary societies working in Madagascar for the comfort and health of their representatives, who live in Imèrina, two sanatoriums have been provided for them away from the capital. One of these is at Ambàtovòry, about fifteen miles distant to the east, and close to a patch of old forest still left among the surrounding somewhat bare country; the other is at Ankèramadinika, at about double that distance, and is built close to the edge of the upper belt of forest, that long line of woods which, as already mentioned, stretches for several hundred miles along the eastern side of Madagascar. Here, after a year's strenuous work in college, or school, or church, or in literary labour, or in something of them all, it is a pleasant and healthful change to come for two or three weeks to the quiet and restful influences of the beautiful woods, with their wealth of vegetable life, and with much to interest in the animal life of bird and insect.

I ask my readers to accompany me then in a visit to Ankèramadinika, and to wander with me in the forest and observe the many curious and interesting things which we shall find in our walks. The forest is here about seven or eight miles across, and from the verandah we can see over the woods to the lower plain of Ankày, and beyond this to the long line of blue mountains covered by the lower and broader forest belt. A wonderful sight this plain presents on a winter morning, when it is filled with a white sea of mist, out of which the forest and the hills rise like islands, and the feathery masses of cloud against their sides have exactly the effect of waves breaking against a shore.

It will be fitting here to say a few words about the flora of Madagascar, and here I may quote what my late friend, the Rev. R. Baron, remarked in a paper read before the Linnæan Society in 1888.¹ He says :

“ It may now be said that the vegetable productions of the island have been very extensively explored, and that the majority of the plants inhabiting it are known to science. The country has been traversed by botanists in many different directions, its highest mountains have been ascended, its lakes and marshes crossed, its forests penetrated, and large collections of plants have been made. About four thousand one hundred species of plants have now been named and described, and I think it may be said with certainty that the great bulk of Madagascanian plants have already been gathered, so that we have now sufficient data to enable us to draw a few general conclusions as to the character and distribution of this very interesting and remarkable flora. Of the four thousand one hundred indigenous plants at present known in Madagascar, about three thousand (or three-fourths of the total flora) are, remarkable to say, only found here. Even of the grasses and rushes, about two-fifths of each order are peculiar to the island. There is one natural order confined to Madagascar, the Chlænaceæ ; of ferns more than a third are endemic, and of orchids as much as five-sixths, facts which are sufficient to give a very marked individuality to the character of the flora.”

Mr Baron gives the following graphic account of his experiences as a collector of plants :—

“ Botanising in Madagascar, as those who have travelled in wild and uncivilised regions in other parts of the world will easily believe, is a totally different experience from botanising in England. Your collecting materials are carried by a native, who may be honest, or not, in which latter case the drying paper will begin gradually and mysteriously to disappear, and the leather straps with which the presses are tightened will, one by one, be quietly appropriated. For a Malagasy bearer has a special weakness for leather straps, they being largely used for belts, so that both for the sake of your own comfort and the honesty of the men, the sooner you dispense with them the better. As for the dried plants themselves, they are secure from all pilfering ; for of what possible use or value they can be, it puzzles the natives to conceive. You might leave your collection in a village for a whole month, and you would find on your return it was still intact. If, after a day’s

journey, you sit down in a hut to change the sheets of paper containing the specimens, the villagers will be sure to come and, standing round in a circle, gaze at you in mute astonishment turning over the plants so well known to them. After a few minutes' silent gaze, there will perhaps be a sudden outburst of amused laughter, or it may be a little whispering, which, if it were audible, would be something to this effect : ' Whatever in the world is the man doing ? ' or, ' What strange creatures these white men are ! '

" Some of the people doubtless think that you are a kind of sorcerer. For these dried plants—whatever can you do with them ? You cannot eat them. You cannot make them into broth. You cannot plant them, for they are dead. You cannot form them in bouquets or wreaths, for they are brown and withered. Is it surprising, then, if some of the natives think that you are dabbling in the black art, and that your plants, in the shape of some strange and mysterious decoction, are to supply, it may be, a potent rain-medicine, or a love-philtre, or a disease-preventing physic ? For among the natives themselves there are many herbal quacks, who, for a consideration, are able, not only to prescribe for the cure, and even prevention, of disease, but also to furnish charms against fire and tempest, locusts or lightning, leprosy or lunacy, ghosts, crocodiles, or witches. The explanation which I have most frequently heard given, however, by the more intelligent of the natives as to the use of the dried plants is that the leaves are intended to be employed for patterns in weaving.

" It is not, then, the natives that you have to fear in regard to your collections of plants ; it is the weather, it is those heavy showers that, unless protected with extreme care by waterproof coverings, succeed in soaking your specimens and your drying paper, so that you have occasionally to spend half the night in some dirty hovel in doing what you can, by the aid of a large fire, to save your collection from destruction. Still all the difficulties and discomforts are far more than outweighed by the pleasure you gain in the exercise, a pleasure which is enhanced by the consciousness that you are probably the first that has ever plucked the flowers from Nature's bosom in that particular locality, and that a large number of the specimens will probably prove to be new to science."

Although to anyone merely travelling through it, this upper forest seems, especially in the cold season, to be singularly deficient in animal life, yet to those who will carefully observe, as they ramble through these woods, there are numerous small living creatures well worth careful study. One cannot pass many yards along a forest path without noticing here and there a long white bag hanging on the trees and bushes. These vary in length from about six inches to a foot, or even eighteen inches, and are a long oval in shape ; the upper part shines with a silky lustre, and the whole would do so, but for its being filled at the lower part with a mass of dark brown earthy substance, which soils its purity. On cutting open the upper portion of the bag, which is tough and strong, it is found to be filled with a mass of brown caterpillars, about an inch and a half long, all wriggling about when thus disturbed in their comfortable home. The dark substance is evidently the droppings of these caterpillars ; and the opening at the lower end, sometimes small holes around it, give exit and entrance, for generally two or three of the insects are seen crawling on the outside. It would appear, therefore, that this silken bag is the nest or home spun by the caterpillars, a common habitation in which they undergo the next change before becoming perfect insects. One always sees that the branches near that on which the bag is suspended are stripped of the leaves, no doubt by its inmates. I noticed that, a day or two after I had cut open one of these bags, a thin film of web had been spun over the opening, so as to close up the entrance I had unceremoniously made into the privacy of the little community.

No one can pass through the upper or lower forests without noticing the much more prominent nests made in the trees by another insect, a small species of black ant. These nests are often as large as a football, and are apparently made of cow-dung, or earthy and vegetable matter, forming a coarse papery substance ; they are peopled by large numbers of ants, and are dark brown in colour. If one is procured—not an easy matter, for the little inhabitants rush out and attack the intruder, and dig their jaws into one's flesh in a way to make one jump—it will be seen, on cutting open the nest vertically, that there is a series of thin floors about half-an-inch apart and supported by pillars. The ants run about frantically, their chief care being

to carry the white eggs and pupæ to a place of safety. But it will be observed that in the nest there are to be seen a number of very small but handsome beetles, perhaps in the proportion of one to a hundred of the ants. What purpose do these entirely different insects serve in the economy of ant life? It appears that this is a fact observed in the nests of many other kinds of ants, for the Rev. J. G. Wood, in his charming book, "Homes without Hands," says that above thirty species of beetle are known as inhabiting ants' nests. But he can throw no light upon the purpose served by the presence of the beetles. Besides these large and conspicuous nests, containing probably thousands of ants, other nests, of all sizes, from about that of a nut to an orange and upwards, may be seen: the hamlets, villages, and small towns of the ant world, while the large nests are the great cities of their commonwealth. The ants inhabiting these dwellings appear to be all of one species, and about three-sixteenths of an inch in length. What can these little creatures live upon?—for they can hardly descend for it to the ground, from heights of twenty, thirty, and even fifty or sixty, feet.

A very different kind of ants' nest is seen in the more open and sunny forest paths (and also in the bare interior country). These have the form of a low circular mound, from eighteen inches or more in diameter, and perhaps eight to ten inches high, and have a large opening at the top—a miniature "crater." This mound consists of the fine grains of earth and sand brought up and thrown out by the little workers in excavating their subterranean dwelling. These ants are larger insects than the arboreal species; they are about three-eighths of an inch long, and seem to exist in great numbers in their homes, the entrance being like a crowded street, with passengers going to and fro. They may be met with all round their nests, often at a considerable distance from them, frequently tugging along pieces of chewed sugar-cane, or portions of dead insects, enormous in size compared with themselves. The ants are the scavengers of the country; no beetle, or worm, or grub, or animal matter of any kind, can be many minutes on the ground before it is detected by some ant, which communicates the fact forthwith to its fellows, and they immediately fall on the spoil, cut it in pieces and convey it to their stronghold. It is astonishing to see the heavy loads that two or three ants will stagger along with for the

common weal. Truly, although they are a small folk, they are "exceeding wise."

Another species of ant, which does not appear to construct a nest, but inhabits the crevices and under the bark of trees, is rather conspicuous from a large tuft or cushion of pale brown velvet-like hairs on the upper side of the abdomen, and a smaller one on the thorax. Its eggs and pupæ are carefully hidden away under pieces of the bark which have become partly detached.

On the top of the Ambàtovòry rock I found another and smaller species of ant, about an eighth of an inch long. This ant inhabits the dried flower-stalk of the *vàhona*, a small aloe growing plentifully on the shallow soil close to rocks. On breaking in two one of these stalks, the ants and a number of pupæ fell out, long white cases, in which the dark body of the immature insect could be seen. The little creatures seemed greatly relieved to be able to gather up these precious pupæ, and they soon collected them all, and brought them again into their home. On examining the stalk I could see no entrance except a minute hole, like a pinprick, at the top, just below where the head of flowers had blossomed. It seems probable that the ants find food in the pithy interior of these leaf-stalks.

In passing through the bush or the secondary forest, one frequently sees the leaves of certain bushes withered and folded up together. On opening one of such nests, it proves to be the home of a species of beetle, a very handsome insect, about an inch long, with a long slender thorax, and of a beautiful metallic-purple colour. Enclosed in portions of the leaf are small green caterpillars, and in others are chrysalides. A much smaller beetle is also found in many of these nests. The edges of the leaves appear as if sewn together at different places with fine silk.

Although butterflies are scarce in these woods in the cold season, caterpillars are numerous. Those making a large silken bag have already been noticed; but there are others which appear to be just now (in August) in a state of torpor. Here, for instance, is a cluster of a dozen or so of brown caterpillars, all clinging closely together around one another on the top of a small twig. They seem perfectly motionless. Are they hibernating? Here again is a collection of beautiful little

caterpillars, about an inch long, of lovely pale green and bluish-green colour, with markings of orange dots along the sides, and four tufts of yellow hairs on head and tail. These are lying side by side, half-a-dozen together on a leaf, and also appear perfectly torpid, for they do not move for several days together. Here again, on a leaf, are about thirty small caterpillars, about five-eighths of an inch long. These are seen to be striped with dark lines, like black velvet, with delicate markings and spots of bright yellow. These insects, like those just mentioned, are motionless and crowded together, as if for warmth.

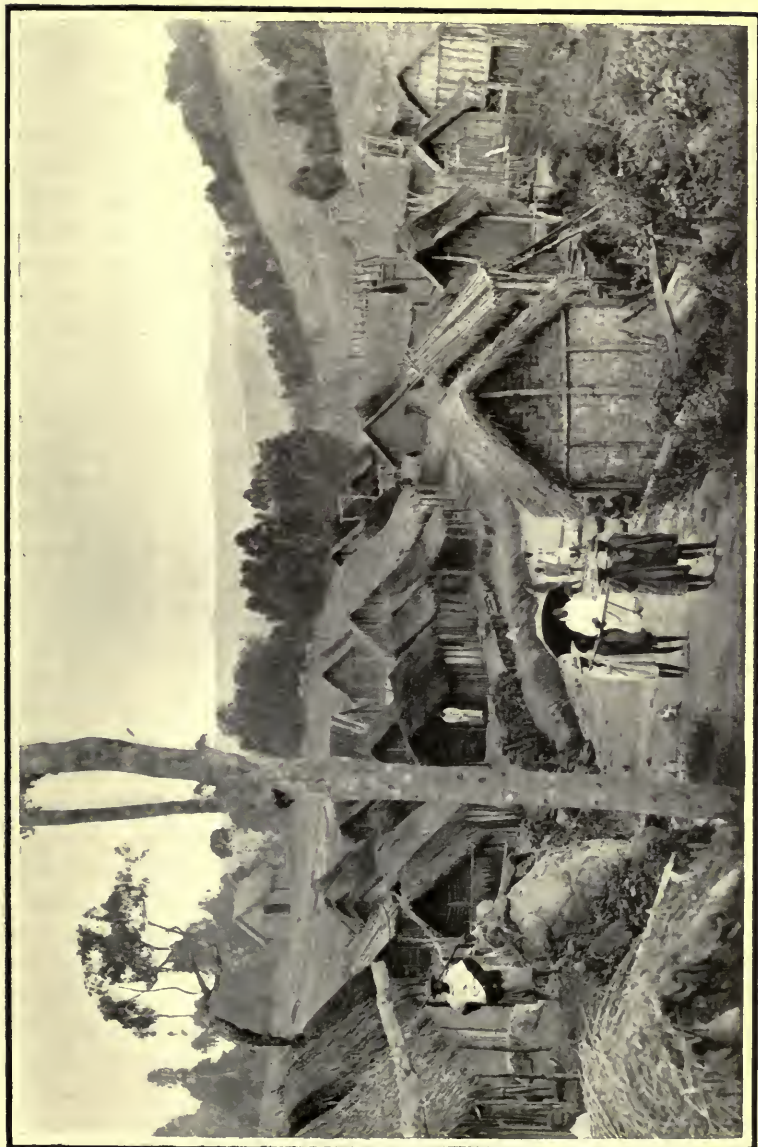
Walking slowly along, one notices a peculiar marking on a twig ; this on close inspection is seen to be an assemblage of the eggs of some butterfly or moth, about a hundred of them, arranged in four or five regular rows, pretty minute globes, light greyish-brown in colour, with a minute black spot on the top, and hardly one-sixteenth of an inch in diameter. In bushes and small trees, somewhat unsightly little bundles of leaves are sometimes very conspicuous. These are bound together with an irregular mass of web ; and cutting one of them open, it is found to be full of the elytra of small beetles and the chitinous portions of other insects, as well as leaves, forming a closely compacted ball. This appears to be the work of a small spider, which is generally found in some portion of the nest.

There are many pleasant walks in different directions through the woods, some of them merely woodcutters' paths, and others broader, where a palanquin can be taken. One cannot go far, however, without having to go down steep descents and again having a stiff climb ; but the variety of leafage, the frequent occurrence of some beautiful flower or bright-coloured berry or fruit, or gay insect makes a walk full of interest ; and when we reach a high point there are extensive views over the undulating masses of green foliage of very varied tints around one, and the bare Ankày plain, with the distant lower forest, twenty or thirty miles away, and fading into the distance north and south.

Reptiles are not very conspicuous in these woods ; one seldom sees a snake, although probably the dense undergrowth affords them sufficient concealment. In the outskirts of the

forest, however, and indeed all over Imèrina, a pretty snake, from eighteen inches to two feet long, is frequently seen, dark brown in colour, with fine white lines along its slender length. The under side is white. Notwithstanding the innocuous character of these little snakes, it is amusing to see the dread the people have of them ; our bearers, for instance, will leap away from them as if they were treading on the sharpest thorns. Some superstitious notions may partly account for this fear, as one of the former chief idols of the Hova, called Ramàhavàly (" the Avenger "), was supposed to be the patron and lord of serpents. One sometimes sees a water-snake swimming over the surface of a pond in a most graceful fashion.

Lizards are now and then seen ; one is a large unpleasant-looking creature, nearly two feet long, of which the tail is about one foot. But a much smaller and prettier one is not uncommon, with delicate markings. Other species, in the south-west region, vary in length from six to nine inches. And here, on the fleshy leaves of an aloe, we may see, basking in the hot sunshine, a beautiful little bright green lizard, or darting over the surface with such a rapid movement that it is difficult to observe it closely. Its colour is so exactly like its habitat that it is doubtless a " protective resemblance." While staying at the sanatorium in November 1899 a very curious arboreal lizard was brought to us by some boys. This creature was clinging to a stick, and at first sight, and until closely examined, I could not distinguish it from the branch to which it clung. It was about six inches long, the body was somewhat flattened, as well as the head, and the eyes were large and bright. The feet were somewhat webbed, the toes ending in small disks like those of the geckoes. The tail was broad and flat, lying close to the branch, and shaped something like that of a beaver. But the most interesting point about this lizard was the wonderful resemblance of its colouring to that of the bark of a tree. The minute scales of the skin were mottled with brown, grey, green and white, so as exactly to resemble tree bark, with the usual clothing of lichens precisely the same in colour, together with small irregularities of surface ; so that until examined minutely, one could hardly believe that the small patches of colour on the animal's skin were not also due to vegetable growths. It was difficult



A FOREST VILLAGE

A native lady being carried in her palanquin. Notice the thatched huts and small verandahs. The village is built in a clearing of the forest on the route from the coast to the interior

at a few inches' distance to see where the lizard began and the wood ended ; and in the forest it would be impossible to distinguish it from the branch to which it clings. It proved, on being sent to England, to form a new genus.

Chameleons are very frequently met with, not only in the woods but also in the open country of Imèrina ; and in our gardens at the capital we often see them on the bushes or the paths, from the little baby one of an inch long to the full-grown one of six to eight inches. In the paths near the sanatorium one may see them digging holes and depositing their eggs, which are about the size of a small bean. Their colouring is often very beautiful, with its shades of green and yellow and black, brown and red markings, and there are certainly very rapid changes of colour according to the different surroundings. The bright tints they exhibit in sunshine and on leaves become dull dark brown in the shade, or on dark coloured resting-places. Sometimes they lose all colour, for I one day saw, on the path near the woods, a chameleon in the coils of a small snake, which had wound itself three times round the body and was apparently preparing to swallow it, beginning at the head, although it seemed almost impossible that the bulky body of the chameleon could pass through so small an opening. And this was a curious fact : the chameleon was perfectly *white*. From a sentimental pity for the little creature, I unwound the snake from it and placed it on a bush. It was apparently uninjured and soon began to resume its ordinary colouring, of which its terror had temporarily deprived it.

It is a noteworthy fact that Madagascar is one of the headquarters of the Chameleonidæ, for out of fifty known species twenty-one at least are found in this island ; and of the twenty-five kinds which have been enumerated as having horns and other remarkable processes on the head, no less than seventeen are peculiar to this country. One species has a nose dilated and toothed on each side ; another has the top of the head conically produced ; while four species have two flat diverging nasal prominences covered with large scutes ; and in yet another species, the single long conical appendage to the nose is flexible. The largest Madagascar chameleon known is about a foot long and is called Ramilahèloka, which may perhaps be (freely) translated, "Naughty old boy," probably from its

uncanny appearance and earthy colour ; it is apparently always found on the ground. Of this creature the natives assert that anyone stepping on it, accidentally or otherwise, or seizing it, becomes ill. From the slow, deliberate pace of the chameleon, the Malagasy proverb advises foresight and retrospect : “ *Ataovy toy ny dian-tàna : jerèò ny alòha, todìho ny aoriana* ”— *i.e.* “ Act like the stepping of a chameleon : look where you are going, look back the way you have come.” Naughty little native boys are fond of making the male chameleons fight together, and it is curious to see how widely the red mouth is opened at such times.

While staying near the forest I occasionally saw and had brought to me specimens of some of the land-shells which are often found in damp places in the woods. Many years ago more than two hundred of these were known, and this number has probably been considerably added to since, and will still be increased as the country becomes more perfectly explored. Of non-operculate species about eighty were then described, of operculate species about fifty, and about fifty forms had been recorded from the lakes and rivers. The largest of these shells is a species of *Helix* (*bicingulata*), warm brown in colour, with diaper-like markings, flattish in shape, and three inches in its longest diameter. There are several other smaller *helices* ; also examples of *Cyclostoma*, the opening of which, as the name implies, is almost a perfect circle ; species of *Ampullaria*, which have a very large opening ; *Stenogyra*, a long oval and spiral shell ; dark green *Melanatria*, a large spiral shell like *Turritella*, three inches long, which I have gathered in forest streams ; while the most delicately marked shells are species of *Neritina*, with black lines, like fine etchings, on a pale yellow ground. Species of *Bultimus*, also a beautifully marked shell, and of *Limnea*, *Physa*, *Phanorbis*, and many others are among the fluviatile and terrestrial mollusca of Madagascar.

In walking through the woods one constantly comes across traces of the wild boar, or, more properly, the river-hog (*Potamochoærus larvatus*), although the animal itself is rarely seen. It is a somewhat ugly creature, with high withers, long back and little hair. It has an enormous tubercle, supported by a bony protuberance in the jaw, which renders the face of the animal extremely disagreeable. It must exist in large numbers, for



CHAMELEON MINOR.

Madagascar is one of the head-quarters of the Chameleoniadæ, for out of fifty known species twenty-one at least are found in this island.

it digs up the ground in search of roots and often does much damage to plantations. The hunting of the wild boar is a favourite sport with the Malagasy of certain districts, and Europeans who have joined in the hunt have found it an exciting sport, with a distinct element of danger, for the beast, when infuriated, is a formidable animal from its long and powerful tusks. Some naturalists are of opinion that there are two distinct species of this river-hog, one found in the upper forest, and the other on the coast and the lower forest region ; of these, the latter is the larger animal.

Turning now from boars to birds. Many of the Madagascar birds are by no means deficient in the power of producing sweet sounds of a very pleasing character and in considerable variety of note ; and there are some few whose song has even been considered to resemble that of our European nightingale. Although in the cold season there are comparatively few birds seen or heard, yet it is not so in the warmer months, or in the lower forest all through the year. Staying near the upper forest in the month of December 1884, we sat down on the margin of a stream, enjoying greatly the beauty of the woods and especially the singing of the birds. Never before had I heard in a Madagascar forest so many different notes, or so constant a sound of bird life. Besides this, there was the low undertone of water over the rapids some little distance away and the hum of insects. It was a great enjoyment just to sit and listen, and see the birds as they flew around us. Among these were the *Sòikèly*, a species of sun-bird, a very little fellow, who sat on the topmost point of a bare branch. There are three species of Nectarinidæ found in the island, one of which, the glittering sickle-billed sun-bird (*Neodrepanis coruscans*), belongs to a genus peculiar to Madagascar. Many of the birds of this family rival, in the Old World, the gem-like and metallic tints of the humming-birds of the New World, and this is true of those found here. M. Pollen observes of them that they live in flocks, and all day long one sees them darting about the flowering shrubs, sucking with their long tongue the nectar which forms their principal food. Their song is long, very agreeable, but little varied, and they have the habit of suspending themselves by their claws from the small branches. The male bird of one species has metallic tints of purple, green, red and yellow. The other

species is black underneath, with green and purple metallic reflections on head, back and wings.

Among the most beautiful birds in Madagascar are several species of the rollers (*Coraciadæ*), so called from their peculiar habit of flight. The five species found here live mostly on the ground and come out chiefly at dusk. The *Vorondrèo*, or Kiròmbô roller, plays a great part in the chants and religious recitations and folk-tales of the Malagasy. These birds live chiefly on grasshoppers, but they also devour chameleons and lizards. When they cry they puff out the throat, so that this portion of the body has the appearance of a pendent bag. The colouring of this species is perhaps the "quietest" of the five, having a good deal of slaty-grey on head and breast. But both it and its companions have shades of "shot" colour, purple and green, or red and green, as looked at in different lights. The others exhibit larger masses of bright colour; the violet roller having, as its name denotes, a good deal of violet or purple tinting. Four of them are rather large birds, but the scaly ground roller is small, with a curious collar of black and white feathers, reminding one of the strange neck and throat appendages of some of the paradise birds.

Other birds we saw and heard that day were the *Railòvy*, a species of shrike, with long forked tail; the *Bolòky*, or grey parrot, with a long repeated whistle, as if going up the gamut; the *Vòrondrèo*, one of the rollers, with its prolonged whistle ending in a sudden drop; the *Parètika*, one of the warblers, with a creaky little short note, something like a child's rattle; together with these sounds was the *kow-kow* of the *Kankàjotra* cuckoo, the varied mellow notes of the *Tolòho* cuckoo, the cooing sound of the *Fòny*, or wood-pigeon, and also the call of one of the hawks.

¹ Mr Baron was for thirty-five years a missionary of the L.M.S. A good writer, an eloquent speaker, and an earnest missionary, he was also a very able botanist and an accomplished geologist, and at the time of his lamented death, in 1907, he probably knew more about both these sciences, as regards Madagascar, than any other European. On account of his researches, and the large collections he made, he was elected a Fellow of both the Linnæan and the Geological Societies, honours never conferred except for substantial scientific work.

He also received a specially fitted microscope from the Royal Society for petrological study, in which he became very proficient. During his residence in Madagascar he sent home many hundreds of plants, a great proportion of which were new to science, and also a large number of rock sections for microscopical and polariscope study. Twice he was offered valuable positions under the French Government in this island, but he was too true a missionary to give up Christian work.



CHAMAELÉON LONGICAUDA

*2/3 full size**How to, from above*

CHAMAELÉON WILLSI

Chamaeleons

CHAPTER XI

FOREST SCENES

ANYONE who has stayed near the upper forest during December or January, and has quietly watched for a short time among the trees, will not complain of scarcity of bird life to admire and study. The beautiful creatures will come and alight all around us, if we only remain perfectly still, seeking their food as they hop on the ground, or flutter from branch to branch. We may watch their nests and see their eggs, and then the newly fledged birds, noting from day to day how they develop ; until one morning the nest is empty, for its little inmates have found out their power of wing, and have left it to set up for themselves and add another little company to the tenants of the forests. It may be truly said that the note of one bird or another is never silent at this time of the year all day long, while some are heard also at night. I remember especially watching one of the two species of goat-sucker, which are found here : for although it is called *Matòri-andro*, or "day-sleeper," from its nocturnal habits, it may be seen in shady places at midday ; its beautifully mottled shades of brown and grey giving it, no doubt, protection, from their resemblance to its surroundings. They have the habit of rising from a slight elevation straight into the air ; then they let themselves suddenly fall, to resume their ordinary mode of flight. It will also fly along the paths, permitting one to approach it again and again, and when flying it reveals the black and white colouring under the wings. They feed exclusively on nocturnal insects, chiefly moths and beetles.

While speaking of the birds of the interior, one must not forget the owls, of which six or seven species are known in Madagascar ; two of these, the scops owl and the barn owl, are tolerably plentiful. The last-mentioned appears to be exactly identical with the almost world-wide and well-known bird of that name. As among most other peoples, the owl is regarded

by the Malagasy as a bird of ill-omen ; they call it *Vòrondòlo*—i.e. “spirit-bird”—thinking it an embodiment of the spirits of the wicked ; and when its startling screeching cry is heard in the night they believe it to be a presage of misfortune. There are numerous fables and stories about the owl, illustrating the popular dread of the bird. But like the owls in all other parts of the world, the Madagascar species are really public benefactors, by keeping down the number of rats and mice and other vermin ; and yet their nocturnal habits, their large staring eyes, the “uncanny” ear-like feathers of some, and especially their unearthly screech, have all combined to make them objects of dread. One species of owl is really a beautifully coloured bird, its plumage being pale brown, spotted with silvery markings.

The bush and woods of small trees which are found surrounding the upper belt of forest do not show many flowers during the cold season of the year. Yet even during these cooler months—May to August—innumerable objects of interest present themselves to those who will use their eyes as they walk along the woodland paths. Among the few flowers that are to be seen, besides the ever-present orange spikes of the *Sèva* (*Buddleia madagascariensis*), and the purple flowers of the *Sèvabé* (*Solanum auriculatum*) are the bell-like reddish flowers of a species of *Kitchingia*, which are rather plentiful ; and towards the end of August a number of small trees and bushes are showing clusters of handsome crimson flowers ; while a purple trumpet-shaped flower is to be seen here and there. Not uncommon is a shrub with small red flowers, like honeysuckle, growing at the axils of the leaves and all along the stems. More rare is a good-sized bush, with large light green and glossy leaves, and with clusters of yellow fruits, much like large white currants. This shrub would be a handsome addition to a garden. Berries of various hues—black, red, orange and yellow—are fairly plentiful ; and in many bushes and trees the lack of flowers is almost made up for by the brilliant scarlet, or crimson, or orange colours of the new leaves, and in others again by the bright orange or red of the fading leaves.

There are few trees of any size left in the woods in the immediate vicinity of the sanatorium, or near the paths through them ; they have all been cut down for the timber market in the capital, or for house-building in the nearer villages. But

in the deep valleys not a mile distant there is still much virgin forest, and many trees of considerable height ; and on the road-side in the Mandràka valley, along which the automobile road and then the railway have been constructed within the last ten or twelve years, both cut through dense forest, there are many lofty and isolated trees still left standing, as well as numbers of them in the adjoining woods. Like most tropical trees, these show the generally vertical habit of the branches ; in the crowd of competitors there is no room for lateral expansion by wide-spreading branches ; every tree presses upwards to get the light and heat of the sun. In many parts of the forest, the small palm, commonly called the "bamboo-palm" (*Mal. Fàri-hàzo*—i.e. "woody sugar-cane"), is very plentiful, giving a thoroughly tropical appearance to the vegetation. Few trees are more beautiful than this palm, with its ringed stem, three to four inches in diameter, and its graceful crown of light green pinnate leaves, through which the sunlight shines. Its usual height is twelve or fourteen feet, but it occasionally attains double that height, or more, in certain situations. A much larger, but far less common, palm is the *anivona*, but this is because of its being cut down for the sake of its tough wiry bark, of which the people make the flooring of their houses, and also use in the construction of the old-fashioned timber-framed Hova dwellings. The bamboo-palm seems of much less practical use, and is therefore much more plentiful. Here and there a still smaller species of palm may be found, with a stem not exceeding an inch in diameter.

A very noticeable feature of these woods, as indeed of all tropical forests, is the profusion of climbing plants. Even the smaller trees and bushes have their twining and creeping parasites, tightly wound round their stems. And from the tallest trees there hang and intertwine all manner of lianas, some as big as a ship's cable, and others of all intermediate sizes—ropes of every dimension, down to the finest cord, and often forming an almost impassable barrier, an inextricable tangle of dense vegetation. Frequently these climbing plants seem to strangle and squeeze out the life of their unfortunate hosts ; and it is often difficult to distinguish the foliage of the original tree, and that of the parvenu, which has used its more robust neighbour to climb up to the light and heat above the surround-

ing mass of leafage. Some of these climbers have prominent and beautiful flowers, which mark their presence very distinctly ; one of these, first sent home by a lady, proved to be a new species. This liana is about as thick as a one-inch rope, and its spikes of creamy-yellow flowers are set from one to two feet apart on the main stem. These spikes are from ten to sixteen inches in length, each containing from forty to sixty large flowers growing closely together, so that they are very conspicuous in the forest, forming immense festoons of flowers, mounting to the tops of lofty trees, crossing from one tree to another, and shining almost golden in colour in the brilliant sunshine. These lianas are very plentiful and may be recognised at a considerable distance, so that they form in November one of the noticeable features of the upper line of forest. In the cold season, during which many of these observations were made, of course this liana is indistinguishable from the tangled mass of vegetation.

Although during the winter months flowers, as already mentioned, are scarce in the upper forest, there is very much to interest one in the cryptogamic vegetation which is so abundant everywhere around us. The mosses are seen in great profusion, and of many species. Frequently they occur in dense masses, carpeting the ground and the bases of the trees with a thick cushion-like covering. And of what beautiful and varied colours are these humble plants ! light green and all shades of darker green, star-like mosses of pale pink, browns and greys, some bright crimson in colour, and some with waxy-looking fructification stalks ; and of all kinds of growth ; hair-like filaments, delicate branching forms, some thick like grass, others like seaweeds, others silvery-white on one side and chocolate-brown on the other ; but words fail to give any adequate idea of their variety and beauty. During a short ramble a score of well-marked species may soon be gathered.

And the lichens are hardly less numerous or beautiful than the mosses : indeed it is sometimes difficult to tell to which order of plants some of these organisms belong. In many drier places the ground is covered with masses of a pale grey species, delicately branched. And almost everywhere the bushes and trees are festooned with the hanging filaments of another pale greyish-white lichen (*Usnea sp.*), which give them quite a

venerable appearance. Another common species is a branching coral-like one, pale green above, with beautiful shades of brown underneath. The rocks seen all over Imèrina are sometimes perfectly white with minute forms of lichen, but more frequently present a mosaic of differently coloured species : black, white, orange, russet and red.

And the fungi again are quite as noticeable as the other cryptogams, and their colours make them even more conspicuous. On decaying timber, their circular and collar-like forms and bright tints constantly strike one's attention. From one inch to three or four inches in diameter these plants present a great variety of colour ; pure white, pale buff edged with brown, brilliant scarlet, orange, yellow, dark brown, etc. ; all these are very common. Some fungi are hard and woody in substance ; others are leathery and flexible, others soft and gelatinous ; and occasionally one sees specimens a foot in diameter, with delicate shades of browns and greys on their upper surface.

It may be easily imagined that with this wealth and variety of cryptogamic forms many of the tree trunks are a perfect flora of the humbler kinds of vegetable growths ; for we have not mentioned the delicate hymenophyllum ferns which also cover them in damp situations ; or the great hart's-tongue ferns, which often occupy the forks of the branches ; or the innumerable small bulbs of the orchids, which cling, by their long aerial roots, to the trunks and boughs of the trees.

In walking through the woods one sometimes becomes conscious of a sickly sweet smell somewhere near us. This proceeds from a hive of bees not very far away, generally in the hollow of a tree. The honey, which is usually excellent, is generally brought for sale to us in the comb by some of the woodmen. Occasionally, however, it is somewhat bitter, through being obtained from the flowers of certain trees or plants. The Madagascar bee, known to entomologists as *Apis unicolor*, differs but little in appearance from the English species, although it is somewhat smaller, darker, and less hardy. It chooses, if left to nature, the same kind of situation for its hive, and multiplies in the same way. The drones also are idle and are killed off at certain seasons. The Madagascar insect is much more gentle when handled than the English one,

but there is great difficulty in hiving the swarms. These bees continue to store honey during the winter months, although that is the dry season, with few flowers ; and they work in all weathers, even during a heavy thunderstorm.

The enemies of the Madagascar bee are, in the first place, rats, then ants and the wax-moth ; but the greatest enemy of all is the death's-head moth (*Sphinxatropos*), which is very common. He enters the hive fearlessly, for although the bees crowd round him they have no power to stop him, as their stings cannot pierce that downy body, with its tough skin, but merely slip along it harmlessly. As soon as he is within he keeps his wings vibrating with a low humming noise and leisurely sucks his fill—a very long fill. The damage he does is immense, and hives have been known to be sucked dry, and not a drop of honey to be found in them, so that the bees quite give up resisting. Other enemies of the bee are a parasitical solitary wasp, which lays its eggs in the hive ; and another wasp which seizes the bees when returning to the hive for the sake of their laden honey-bag, and it also kills them with wonderful celerity.

The Malagasy have a good general idea of the economy of the hive, and of the habits of the bees. They usually find the wild nests by watching the flight of the laden bees, and then by listening during the hot part of the day, when the bees are “playing.” At most places the people know of a number of wild nests, over which they keep supervision. In many villages they make large quantities of mead, more especially when the rite of circumcision is being observed. For bees'-wax there is always a ready sale.¹

Madagascar, like most tropical countries, is not without a fair share of spiny and prickly plants. Perhaps most in evidence in the interior is the prickly pear (*Opuntia ferox*), which was universally used in old times as a thick hedge for the defence of the ancient towns and villages. With its large needle-like spines, an inch to an inch and a half long, studding its broad fleshy leaves, and capable of inflicting a wound difficult to heal, and with smaller spines covering the flowers and the fruit, it is easy to see that to a barefooted and lightly clothed people such a hedge presented a very formidable, not to say impassable, barrier. The flowers are large and handsome, yellow and red in colour, and growing at the edge of the leaves—

if indeed they can be called such ; the fruit, which is about as large as a pear, turns yellow when ripe and is not unpalatable, being something like an unripe gooseberry ; but it is exceedingly difficult to get it peeled without being hurt by its hair-like needles. The large spines are the ordinary Malagasy pins, and are very useful for this purpose.

Another very noticeable plant is the *Sòngosòngo*, a species of *Euphorbia*, with spiny stems and brilliant scarlet flowers. This is planted on the top of the low earthen banks which form the boundaries between private properties and the roads ; but it is not nearly such a formidable defence as the prickly pear. A very common variety of this plant has pale yellow flowers.

Another prickly plant is the Mysore thorn, or *Tsiàjakòmby* (*lit.* "impassable by cattle"), which is largely used for fences and stockades. From its numerous hook-like thorns, it also is not a plant which can be easily passed through, when growing thickly. It has a large spike of yellow flowers.

Another plant or shrub, which grows to the size of a tree, is not prickly, but stinging. This is the *Amiana* (*Urera radula*). The large velvety leaves sting like those of a nettle ; they are, however, of beautiful and complicated outline, and I have pressed specimens taken from young plants which are as much as two feet across, and which would be admirable patterns for ornamentation. The wood is very soft and, when on fire, smoulders for a long time. The trunk, which is tall and straight, in some specimens is nearly two feet in diameter. Some five different species have been described.

Another stinging plant, the *Agy*, with fine needle-like hairs, which fall in showers and produce fearful irritation, is described in a subsequent chapter. Many trees in the forest are armed with blunt prickles, which injure the hand if they are touched when making one's way through the dense vegetation. In the extreme south of the island there are trees or shrubs called *Fàntsi-òlotra* ("nail-edged" ?), probably a species of *Didierea*, whose thorny stems, always turned towards the south, are said to resemble a barricade of elephants' trunks ; the stem, which is as big as a man's thigh, is entirely covered with large thorns, between which grow the small round leaves. On one of these thorny trees, however, M. Lemaire found a white lemur (*Propithecus verreauxii*) clinging, which, when dislodged, went

leaping across the country on its hind legs, after the fashion of a kangaroo.

Someone may perhaps ask : Where are the people of these woods ? In the upper belt of forest there are few inhabitants except woodcutters, and in small hamlets on the side of the main tracks passing through it ; but farther south, where the two lines unite, we shall find, as we travel past the Bétasiléo province and east of it, a considerable number of people, who are loosely called “ Tanàla,” which simply means “ forest-dwellers,” and of these there are many subdivisions. There are vague and uncertain accounts given by the Malagasy of a tribe of people whom they call Béhòsy, and who are said to live in a wooded country in the west of the island. Their food is honey, eels and lemurs, which latter are caught in traps and fattened. They are very dark in colour and are much like the Sàkalàva in appearance, and are said to jump from tree to tree like monkeys, and cannot easily be followed, as the country is rocky. They make network of cords, hence their name (*hòsy*, string, twine). They are extremely timid, and, if captured, die of fright. These Béhòsy seem to resemble in some of their habits the “ monkey-men ” of Dourga Strait, New Guinea ; but it is much to be wished that more definite information could be obtained about them, for, if what we hear of them is correct, they are probably of a different stock to the rest of the inhabitants of Madagascar.

An apparently well-authenticated account was given by a Mauritius trader of a wild man of the woods having been caught by some Malagasy in the year 1879. He was asleep on the branch of a tree, and when taken resisted violently, biting his captors severely ; after a few days' confinement, however, he ceased to be aggressive. He was described as a powerfully built man, his face and body being thickly covered with long black hair. His mode of walking was very peculiar, as he travelled very fast, occasionally going on all-fours, his eyes being invariably fixed on the ground. When caught he was perfectly nude, but wore clothes when provided with them. He could never be induced to eat flesh, but lived entirely on manioc and other roots ; nor would he sleep in a recumbent position. After some months he learned a few words, and by means of these and signs it was understood that he had a father and two

brothers in the forest. These were found, and surrounded by a search-party one night, but easily eluded their pursuers, jumping from tree to tree and running on all-fours. The captured man died five months after being taken (see *Proc. Roy. Geogr. Soc.*, May 1889).

The central part of the Indian Ocean is well known as the region of cyclones, and these dreaded storms often include in their revolving course the islands of Mauritius and Réunion, and occasionally touch the eastern shores of Madagascar. A notable example of this was the cyclone of November 1912, which stranded the s.s. *Salazie*, and wrecked Diego-Suarez and many villages in the north of the island. It is very seldom, however, that these storms reach the interior; but in the month of February 1876 a cyclone did ascend to the upper region of the island and did considerable damage. With my wife and children I was staying for a holiday at that time at Andràngalòaka, a small village on the edge of the upper forest, but five or six miles south of Ankèramadínika, where our good friend, Dr A. Davidson, had a country house, which he often placed at the disposal of ourselves and other friends; and never shall we forget the experiences of that night of peril.

It was a Sunday evening and the sun set with a radiance which covered the whole sky with a crimson glow, in a very remarkable manner. We settled down after our evening meal for a little reading aloud, but the wind rose rapidly, and after a time the roar was so great that we could not go on. We found that its violence increased, and at length we perceived that it was slowly changing in its direction. We went to bed, but not to sleep, for the rain poured in from the roof, and the howl of the wind made sleep impossible. We lay trembling on our beds, fearing every now and then, as a more violent burst shook the house, that it would be blown down over us, and we buried in its ruins. Such would have been the case, I believe, had not the gables been built of burnt brick and strengthened by the chimney-stacks. During the night the metal roofing of the verandah was torn off with a fearful clatter, and soon after dawn—and how long that dawn seemed in coming!—the outer roof of the house, which was of grass, fixed over the tiled roof, was bodily seized by the wind and carried off altogether with its timbers, with a great crash, and then we thought the house

itself was all going. But towards nine A.M. the wind gradually subsided, after having blown from about three-quarters of the circle of the compass.

Scores of country chapels as well as houses were unroofed and greatly damaged by this storm. A day or two after it we tried to take one of our usual walks through the woods, but the paths were almost obliterated by fallen trees and branches. In the valleys scores of great trees had been torn up by the roots, with masses of soil clinging to them ; in other places they had been broken off short, snapped as if they had been mere twigs ; and in the prostrate branches were numbers of arboreal creatures—chameleons, lizards, serpents and tree-frogs—dashed down from their homes. It was all striking evidence of the force with which the fierce wind had roared, especially up the valleys, and had laid low everything in its path.

¹ For most of the information here given about the Madagascar bee, I am again indebted to the the Rev. C. P. Cory, formerly of the Anglican Mission in Madagascar.

CHAPTER XII

RAMBLES IN THE UPPER FOREST

THERE are a number of paths in the forest which may be followed from the sanatorium, north, east and south, and with a considerable variety of scene. But it is easy to get lost in them, for I remember one day when a party of us set out for a morning's walk, but could not find our way back, although we often caught sight of the house ; and it was late in the afternoon before we at length got home, very tired and very hungry. Two of our friends, who were well acquainted with the neighbourhood, were lost in paths not very far from the sanatorium, and had to spend the night in the woods, making as comfortable a resting-place as they could with leaves and bracken, but getting no sleep from the multitude of mosquitoes. And a curious circumstance was, that the Malagasy from the house, who came out to seek for them, were afraid either to shout out loud to them, or to show the lights they carried, for fear of offending the *lòlo*, or spirits, which they think haunt the woods. Had they done either of these things, our friends would probably have escaped being benighted. Happily, the time of this adventure was in the dry season, or it might have had serious consequences.

From what has been said in Chapters IV. and V. about the difficult paths through the chief forest, it is not strange that the Malagasy have considerable dread of it and do not share in our admiration of its beauties. So one of their proverbs says : "*Roa lahy miditra ala : ka izy tokiko, ary izaho tokiny*"—that is, "Two men entering the forest : it's 'He's my confidence, and I am his'"; the fact is that both are afraid. It is to them the "dark forest," full of mystery and fear, and it may easily be imagined that before any practicable roads were made through it, it had much to inspire dread. One of the native hymns, often sung when the natives have friends going away to a distance, prays for protection for them in the forest and also in

crossing the rivers, on account of the many things in both which may injure the traveller.¹

It would probably be a very serious matter for a European to be lost for long in a Madagascar forest, for he would be entirely at a loss for food, and would most likely be unable to produce fire to cook anything he could find. To a Malagasy, however, especially one living in the neighbourhood of the woods, it would not matter so much, as there are several species of yam, which he would easily find. These *Ovinàla* are climbing plants common in the forest, belonging to the genus *Dioscorea*, and have very large edible tubers, which are much sought after by the people; their taste is similar to other yams which are so largely used as food in other parts of the world. In Drury's "Adventures," he speaks frequently of procuring these yams in the south-western forests; for, living many years, as he did, like a native in that part of the island, he became well versed in woodcraft and could live as the people lived.

A European would be equally puzzled as to obtaining fire to cook his yams, were he so fortunate as to find any; but a forest-dwelling Malagasy could easily produce fire by friction. Choosing two pieces of a particular kind of wood, he would cut one to the shape of a round stick with a pointed end; the other he would make into a flatter piece, in which a slight groove is cut. Taking hold of the pointed stick, the operator twirls it first one way and then another, until the friction produces smoke and then fire, which is communicated to a little tinder placed close to the point. Gently blowing upon the spark which is produced, the tinder bursts into flame, the whole operation occupying only a few minutes. There are special words for this mode of obtaining fire: *mamòsitra*, which is also used for the boring of a hole by an insect, or a chameleon, to deposit its eggs; and *miraingy*, the pieces of wood being called *raingy*. But it may be feared that the universal use of Swedish matches will soon render this means of producing fire one of the lost arts.

To tend a fire is, in Malagasy, to *misòrona àfo*; and since *misòrona* also means "to exercise a priestly function," it looks as if this word or phrase was a relic of ancient reverence for fire as a sacred thing, a feeling which is found in the customs and speech of many peoples.

In several directions there are beautiful waterfalls, to which

a pleasant picnic excursion may be made. One of these is called "Tsi-màharé-ritsoka," which means, "Where a whisper cannot be heard," for indeed, when near it, you must bawl as loud as you can to be heard at all; this fall is a succession of cascades, coming down from a considerable height. At another place a large body of water pours at one sweep over a great ledge of rock, perhaps thirty feet deep. And along the automobile road, only a few yards from it up a little valley leading into the main valley of the river Mandràka, we were fortunate one day to discover a most lovely waterfall of considerable height in the midst of dense wood, with a large pool of water at its foot, where a delightful bathe might be taken; an ideal place for a summer day. But the largest and grandest waterfall, and within a little over an hour's walk from the sanatorium, is really an artificial one; for in making the automobile road to Tamatave along the Mandràka valley, the river was diverted from a circuitous course over a number of rapids, and brought by a short-cutting over a nearly sheer fall of about a hundred and fifty feet, where it pours down a magnificent body of water, with a roar and clouds of spray that wet everything for a long way round. The sides of the cutting are being rapidly covered with vegetation from the constant moisture, so that in a short time it will have all the effect of a natural fall. The noise is tremendous, and the fall can be seen from several points on the main road.

At the foot of the second of the waterfalls just mentioned I was fortunate enough to see a rather rare frog, which is peculiar to Madagascar. This little creature is only an inch long, as regards the body, but on that and its long hind legs there are semicircular patches of bright red on a black ground, so that it is very conspicuous (*Mantella baroni*) (see illustration). There is also a much larger frog, three inches in length, with hind legs quite six inches long (*Rhacophoras albilabris*); this species appears to be, in part at least, arboreal as well as aquatic, as its toes are furnished with little disks instead of claws (see illustration). He is, however, a giant compared with the majority of the frogs found in the island, which are not very different in colouring or size from the common English species. These creatures are very plentiful in the rice-fields, and as one walks along the *vàlamparia*, or little banks separating

the fields, the frogs jump off and “ plop ” into the water at every step one takes. In the early morning, after a rainy night, the noise of their croaking is very loud, almost deafening, as they apparently find the increased depth of water much to their liking.

From some small structural peculiarities, many of the Madagascar frogs have been arranged in a distinct genus, called *Mantidactylus*, and of this genus at least sixteen species have been described. Of the widely distributed genus *Rana*, one species, *R. fasciata*, is said by a careful observer to build a kind of nest. These frogs construct regular passages under the grass during the dry season ; their paths are made as regularly as those of a mole, by the little creatures pressing down the short grass near the earth, and drawing together the longer blades, thus rendering them invisible. The nests are from eight to ten inches in diameter by four in height, and made ingeniously by weaving the layers of grass together. When frightened, these frogs throw out a limpid stream of water, which has been stored up in time of need, as in very dry weather, and which is distributed over the body, so as to keep the whole of it moist. The tree-frogs are very pretty little creatures, their light green colour exactly matching that of the leaves on which they live, so that it is difficult to detect their presence, except by close inspection. Their toes end in small disks, so as to adhere closely to the smooth surface of the leaves.

We have already seen that many of the living creatures of Madagascar gain great protection from enemies from the assimilation of their colour to that of their surroundings. This is the case also with many species of grasshopper and of mantis. You see an insect with bright scarlet wings flit by you and settle on a bush ; wanting to observe it more closely, you try to find it, but it has disappeared, and not a vestige of bright colour is to be seen. Still, if you are patient and search carefully, you may presently see a mantis moving its head about in an uncanny fashion, and its fore legs held up in a mock devotional attitude, from which its specific name of *Religiosa* has been given it. But the scarlet wings are folded under its green wing-cases so as to be perfectly unseen, and these coverings are just like a leaf, the rest of its body being exactly the colour of its resting-place. In some of the grasshoppers, this mimicry of vegetable forms is still more wonderful. Here is one which resembles *green* grass,

and its body, legs, wing-sheaths and antennæ are all as like grass as they can possibly be. But here again is another kind, whose body is equally imitative of *dry* grass, and so all parts of it are just like the stalks or the blades of yellowish-brown grass, dried up during the cold season. Even the eyes are imitative, and exactly resemble a small brown seed, such as many grasses bear.

There are many species of beetles to be seen, although none of them are very handsome or conspicuous. The most common kind is a broad flat insect, about an inch long and dull dark brown in colour, which crosses one's path at every step. Another is seen chiefly on the bushes, a smaller insect, but bright shining jet-black. Another, which appears as if it mimicked a wasp in its habit of flight, is shot with brown and green, with very long legs, and is constantly taking short flights or running rapidly. Another one, but much more rare, has golden-green and metallic tints on its wing-cases. But the insect which has puzzled us most is one that I have seen on a large bush of *Ròimémy*, a plant with acacia-like leaves, with prickles along the leaf-stalks. This beetle is about five-eighths of an inch long, and almost hemispherical in shape. It is warm reddish-brown in colour, with a line of black and then of yellow next the head, and is perfectly flat below. These insects cluster closely, as thick as they can lie, in groups of from a dozen to more than a hundred together, all round the thicker stems, so that they look at a little distance like strings of large brown beads; and in some of the topmost branches they form a continuous mass for two or three feet. Amongst these shining brown insects are a few others of quite a different colour and shape, perfectly flat, like a minute tortoise, and of a uniform grey, exactly resembling the lichen on the bark of the tree, and the edges of the carapace scalloped. These grey insects are in the proportion of about one to forty or fifty of the darker coloured ones. There are also a few individuals of the same shape as the brown one, but yellowish-green in colour. What these grey insects can be, and what relation they bear to the much more numerous brown ones, I cannot make out.

Other insects, at first sight resembling beetles, are gaudily coloured. Yonder is a bush which is conspicuous from some little distance, from the quantity of insects clustered on it;

they are about half-an-inch long, but are most brilliant with scarlet, blue and green. Be careful, however, how you handle them, for their scent is anything but agreeable ; and, notwithstanding their gay colours, they are, after all, a species of bug. A beetle which I have often noticed in the woods is an insect an inch and a half long, but with a very long slender proboscis, with which it appears to pierce the bark of the stems on which it rests ; I think it feeds on the juices of the bush or tree, and is probably a species of weevil (*Eupholus sp* ?).

Mimicry, however, is not confined to Madagascar animals, but also occurs among plants. Mr Baron says : “ In some marshy ground on the top of Ankàratra mountain, I found a small whitish orchid, a few specimens of which I gathered. After getting about half-a-dozen, I discovered, to my great surprise, that some of them were labiate plants. I was utterly deceived, thinking it was the same plant I was gathering all the time, so exactly alike were the two species in almost all outward appearances. I felt at once convinced that this was a case of mimicry. At the east foot of the mountain I discovered a similar phenomenon, in a large labiate plant (*Salvia*), strikingly similar to another orchid. No doubt the labiate in each case mimics the orchid, not vice versa, in order to ensure fertilisation.”

In one of our rambles near the large patch of old forest which still remains near the L.M.S. sanatorium at Ambàtovòry I came one day across a cluster of very large earthworms ; at first sight these looked more like a number of small snakes than worms, as they were at least three times the size of any English worms, having about as large a diameter as a good-sized man's finger. They are not, however, very common, as I have only seen them on that one occasion ; so they probably do not play the same important part in the renewal of the soil here as Mr Darwin has shown is done by earthworms in Europe.

Anyone who walks through the forest will notice at points where the paths branch off a pile of bracken, branches of trees, moss, etc. These heaps, as well as those of stones in similar positions in the open country, are known as *jànataovana*. These have been formed by passers-by throwing a stick or stone on the heap, for luck, expressing the hope that, if on a journey, they may have a safe return, as well as success in their undertakings. A similar custom prevails in the eastern parts of Africa, and

also in Sumatra and Timor, and probably in other countries as well.

A walk along the upper edge of the forest, although at some distance from Ankèramadinika, will bring us to one of the native smelting and forging stations, where iron is obtained and made into pigs for the use of blacksmiths, as well as into various implements. Iron is very abundant in the interior of Madagascar, indeed the whole soil over an immense extent of it is reddened by iron oxide, and in some places there is so much magnetite that a compass is seriously deflected and is quite unreliable. At such a foundry one may see in use the "feather-bellows," which the Malagasy brought with them from their far-off Malayan home, and which I believe is nowhere to be found but in Madagascar and Malaysia. This consists of two cylinders, about five feet long and six inches to eight inches wide, made from the trunks of trees hollowed out. These are made air-tight at the lower end and fixed in the earth in a vertical position, about eighteen inches to two feet apart. In each cylinder a hole is made a few inches from the ground, and in these a bamboo cane or an old musket-barrel is inserted, the other end being fixed into the stone or clay wall of the furnace. A piston with feather valves is fitted into each cylinder, and the shafts or piston-rods are worked up and down alternately by a boy or man seated on a board uniting the cylinders. In this way a continuous blast is produced in the furnace. (Such bellows are also used by blacksmiths.)

These foundries are always situated near a running stream of water, so that the ore may be washed and cleared as much as possible from earth and sand. The furnace itself is a hole about six feet in diameter and one or two feet deep; its walls are of rough stonework, built up three or four feet, and thickly plastered outside with clay. Charcoal is used in smelting and, notwithstanding these rude appliances and methods, the iron produced has been pronounced by competent judges to be of excellent quality. Spade-blades, knives, nails, bolts and many other articles are produced by the native smiths; and in the construction of the Memorial Churches, more than forty years ago, I had ornamental hinges, railings, finial crosses, and other requisite ironwork all excellently made and finished by Malagasy blacksmiths.



MEMORIAL CARVED POSTS AND OX HORNS, BÉTSILÉO PROVINCE
Generally the horns are of oxen killed at the funeral



BLACKSMITH AT WORK

Note the feather-piston bellows, and the man playing a single-stringed gourd guitar

Several of the paths in the forest lead down into ravines of considerable depth and also of great beauty ; the combinations of luxuriant foliage, rushing water and lichen-embroidered rocks, ferns and mosses are very varied, and one valley especially reminds one of the celebrated " Fairy Glen " in North Wales. But there are occasionally certain drawbacks even in this natural loveliness, for if you are not very careful you may find yourself attacked by the small leeches which lie in wait on the grass and bushes, and transfer themselves to you as you brush by them. Before you feel any annoyance, you may find yourself streaming with blood from the punctures made by these little pests, which have got under your clothing and are feeding at your expense. Happily, they do not cause any pain worth speaking of, nor are there any unpleasant after-effects, the only discomfort is the blood you lose and having it outside instead of inside your skin.

While staying near the upper forest we had frequently brought to us for sale a basketful of crayfish, which seems fairly plentiful in the streams. This species (*Astacoides madagascariensis*), with its genus, is endemic in Madagascar, and in the interior is of small size, averaging about three inches in length ; the flavour, however, is excellent, and it makes a very good curry. In the south-east provinces, and probably in other coast districts as well, it attains larger dimensions than the above, being about six inches long. It is a curious fact that crustaceans are entirely absent in the African continent, and that the Madagascar species is much like the kind found in Australia, except that the latter is about twice the size of *Astacoides*.

There is a great variety of ferns to be found in every damp place in the valleys, from the minute hymenophyllums on the tree trunks to the larger species of *Asplenium*, *Osmunda*, *Nephrodium* and many others, up to the tree-ferns, of which there are about twenty different kinds, and which give a special charm to the vegetation in many places. On the eastern side of Madagascar the ferns occupy a prominent place in the flora, there being above two hundred species already known, and comprising no less than above thirteen per cent. of the whole flora of that region. Among the Filici are the beautiful gold ferns and silver ferns, the seed-vessels on the under side of the fronds having

quite the effect of the two precious metals. The young leaves of a tree found in the forest (*Eleocarpus sericeus*), when dried and pressed, form the beautiful objects known as “gold leaves.”

A large number of the forest trees yield substances of commercial value. Two species of climbing plants afford india-rubber, one of the most valuable exports of the island. A tree called Nàto supplies a bark which is largely employed by the natives in dyeing the deep red used for their silk *làmbas*, especially those used to wrap the bodies of the dead. Other trees yield various gums and resins, one of these being the valuable gum-copæl, of which quantities are exported. From several other trees tough fibres are obtained for the manufacture of cord and rope; while from a palm called Vònitra the “bass fibre” or piassava is taken, which is used for making brooms, brushes, etc. A shrub, a species of castor-oil plant, supplies seeds which are so full of oil or fat that they are strung on a reed like beads and are used to give light, so that it is called “the candle-nut tree.” When one end is lit, the seeds burn steadily, giving a light about equal to that of two good candles and leaving no ash. A very considerable number of trees and plants are employed in various ways by the Malagasy as medicine, both for internal and external use; and although the virtue of some of these may be imaginative only, there can be little doubt that in numbers of instances these native remedies are of value. Probably a careful examination of them would give some valuable additions to the pharmacopœia.

Among the forest trees is a considerable number which yield valuable timber, most of them hard and beautifully grained woods, which are employed for cabinet-work as well as in house carpentry. In the great palace at Antanànarivo, the three central columns supporting the ridge of the roof are said to be each formed of the trunk of a single tree; the roof is a hundred and twenty feet high, and these pillars are sunk some way in the earth. One of these timber trees, called *Vòambòana*, is extensively used for making furniture—tables, sideboards, wardrobes, writing-desks, bookshelves, etc.—and resembles mahogany. Another tree called *Hàrahàra* has extremely hard wood, and is employed for the long spade handles, and formerly for spear shafts. One species of pine known as *Hètatra*, the only example of that order in the island, gives a hard white

wood used for flooring ; while ebony is procured from one or two endemic species of *Diospyros* ; sandalwood is also reported to be found in certain localities.

It will easily be believed that the mysteriousness of the forest has produced many superstitious notions among the Malagasy, and they have curious stories of marvellous creatures and monsters inhabiting these dense woods. One of these is called *Kindly*, and is said to be human in origin, for although it has no intestines or stomach, yet in all its other parts it is like a living person. Its eyes are red, and its nails long ; and, with others of its kind, it is said to be constantly thieving, so that when anyone leaves out cooked rice or other food, it takes it. It is difficult, however, to reconcile such accounts with that of their boweless condition ; it is thought to be a great misfortune to meet a kindly. Another strange creature is called *Tòkan-tòngotra*, or "Single foot," because it is said to have only one fore and one hind leg ! It is so exceedingly swift that no other creature has a chance of escaping it ; it eats men and goes about at night. Still another strange beast is called *Siòna*, which has also, like the kindly, something human about it. It is said to live away from men, and when anyone goes through the woods and leaves his rice, or his axe, these are taken by the siòna and conveyed to its abode. When the woodmen go to sleep and leave a fire still burning (for their custom is to leave a big log on the hearth, so that they may be kept warm), then this creature comes and warms itself. Possibly the habits of some of the larger lemurs have given rise to such stories, aided by a good deal of imagination ; and the tòkan-tòngotra story probably comes from the herons or flamingoes, which have the habit of standing on one leg when asleep.

In passing along the forest paths we frequently come across examples of the curious ball insect (*Spherotherium* sp.), of which there are several species, at least six, in Madagascar. These insects, which are wingless and many-footed, and are called, not very elegantly, by the Malagasy *Tainkintana*, or "Star-droppings," have the power of instantaneously rolling themselves into an almost perfect sphere, which form they retain as long as any danger threatens them, and no force short of pulling them to pieces can make them unroll. The animal is formed of nine or ten segments, each with a pair of legs and covered with

a plate of armour ; while the head and tail are defended by larger plates, each of which fits into the other and makes a more perfectly fitting suit of armour than was ever worn by medieval knight. There are several species of these pretty and curious creatures. The most common kind here is one which forms a ball barely an inch in diameter and shining black in colour. Another, more rarely seen in the interior open country, but common enough in the upper belt of forest, is of a beautiful brown colour like russia leather, and is quite double the size of the first-mentioned one. In passing through the main forest in 1892, we came suddenly one day to a part of the road which was so thickly covered by such a great number of these creatures that our bearers could not avoid trampling on them. These were of a bronze-green tint and belong to a third species, and were quite three inches in length. Other species of these *Sphærotheria* are found in Africa, Asia, Australia and some of the neighbouring islands.

Another many-footed and wingless creature is common enough in the upper forest, for we often found it on the upper verandah of the house at Andràngalòaka ; this is a shining black millipede, about a foot in length, and half to three-quarters of an inch in thickness. It is called by the natives *Kòdikòdy*, and its numerous reddish legs, not far short of a thousand in number, have a curious effect of successive waves as it moves along. Although not very inviting in appearance, it is quite harmless and is a vegetable feeder. There is another species, which is marked longitudinally with black and red stripes.

More unpleasant by far is another many-legged creature, the centipede, whose sting is said to be exceedingly painful, resembling the puncture of a hot iron, and which is not uncommon in the interior as well as in the forest. The mere touch of its minute claws, if it happens to crawl over one, is said to produce pain and inflammation. I have turned small centipedes out of the hole in a window-sill where the bolt would fall ; and I remember one morning, before getting out of bed, seeing a pretty large one marching across our bedroom floor. Happily these, which are among the few noxious creatures we have in Madagascar, are not very common. Another unpleasant visitor is the scorpion, which is rather apt to get into a house which has much stonework in the basement ; we

frequently killed small ones about an inch long at Antanànarivo. Examples twice that size are found in the Vavavato district ; while on the shores of Bèmbatòka Bay (N.W.Co.) scorpions five inches long occur, and Captain Owen says that they may be found, one or more, under almost every stone. He states a curious fact, if indeed it is one—viz. that the most destructive enemy to the scorpion is the common mouse.²

- | | |
|---|---|
| ¹ “ <i>Ao ny andro mamananala,</i>
<i>Sakambino ao an-ala ;</i>
<i>Raha mandeha mita rano,</i>
<i>Mba hazòny sy tantano ” ;</i>
etc. | “ There are the chilly days,
Sustain them in the forest ;
When they ford the rivers,
O uphold and guide them,”
etc. |
|---|---|

Ala, at the end of the first two lines, is the native word for “forest,” and the native word translated here “chilly” is from the damp and cold woods.

² Here I may notice that, in addition to the above-named unpleasant inhabitants of Madagascar, we have had, within the last eighteen years, a most unwelcome accession to the insect pests, by the introduction of the chigoe, or “jigger,” which was brought by the Senegalese black troops employed in the French conquest of 1895. This minute flea does not jump, but runs over one’s body, and burrows under the skin, chiefly in the feet, but also sometimes in the hands, where it causes intolerable itching, and, if not speedily removed with a needle, becomes in four or five days full of eggs, and causes sores and inflammation. It is a great pest to the Malagasy, the great majority of whom go barefoot. But those who have boots and shoes on get no exemption from the attacks of the jiggers.

CHAPTER XIII

FAUNA

WHILE on the subject of noxious creatures, we remember that one, if not more, of the spiders of Madagascar must be included in the list. This is a small arachnid, about the size and shape of a marble, shining glossy black in colour, except for a small red spot on the fundament. It is greatly dreaded by the natives, who believe its bite to be fatal, and it is probably so if cauterisation and other remedies are not immediately applied. Dr Vinson, a French naturalist, ascertained that this spider, called *Mènavòdy* by the people, is closely allied to the malignant *Latrodectus* of Elba and Corsica, whose bite is believed to be fatal, and also to another spider found in Martinique, which is equally dangerous. People bitten by this Madagascar spider scream out with pain at intervals of a minute or two, as if it came on in paroxysms. I remember that one of our servants when bringing one of these spiders to look at took care to hold it at a very respectful distance from himself, at the end of a long stick.

As we push through the bushes we break through many spiders' webs, and are struck by the extraordinary shape of some of those whose snares we unwittingly destroy by our passing along. Here is one, small and reddish in colour, but much broader than it is long, each side projecting into a long sharp spike—indeed it is spiky in several directions, and is utterly unlike any other spider we know of. This is, I believe, a species of *Cærostris* (*C. stygiana* ?), and belongs to a genus of which several species have names denoting their demoniacal shape and colouring—e.g. *avernalis*, *stygiana*, etc.

As we stop to observe his geometric web, and his bizarre shape, we see on the tree to which several of his main "guys" are fixed a very different spider's house and a very different spider from our angular friend just mentioned. This creature

is a much larger species than the other, with jet-black legs and satiny dark grey abdomen as large as a good-sized nut. He apparently hunts his prey, for he has no net, but hides himself in an inverted cup-shaped house of strong web. As I tap the top of this retreat he shams dead and tumbles down into the grass, from which he will presently ascend as soon as the enemy is clear off the ground.

Close by this hunting spider's home we see the large web of a third species, quite different from the other two. At first sight this appears to be the same insect as the large *Nephila*, which is so plentiful in Imèrina, in orchards and outside houses. A closer inspection, however, shows that it is a different species from that common large spider, for this one has a long filbert-shaped abdomen, striped with brown lines, very different from the golden and silvery markings of the more abundant species. It appears to be strictly a forest spider and seems rather rare.

In rambling along the edge of one of the pretty rice-valleys north of Ambòhimànga, I came across a species I had not met with before. This was of medium size, but was striped in transverse lines of white and black across the abdomen, so as to give it a zebra-like appearance. The under side was almost white; altogether it is a handsome species, and is probably still undescribed scientifically. It makes a geometrical web, and, like several other Madagascar spiders, puts the web into rapid vibration if it is disturbed. Some species draw up their legs close to the body when lying in wait in the centre of their web, so that they too resemble a small lump of earth or a stone. Is not this also done as a disguise? It seems to me highly probable. Other species have the habit of stretching out their legs in couples, so as to seem almost as if they had only four or six legs instead of eight, and thus appear to mimic insects. Is this also intended to hide their predaceous character?

A traveller through the Tanòsy country, south-east coast, speaks of the uncanny aspect of one of the villages in which he stayed; and he says that what increased his impression of it, as like a town of wicked enchanters, was that all the houses were festooned and closely linked together overhead by tangled masses of gigantic spiders' webs, amongst which lay in wait monstrous black spiders. Some of the coast villages, he says, were almost

completely roofed in by these great webs. Spaces of quite thirty feet have been observed spanned by the lines of the nephila mentioned in a former chapter ; and I have noticed that the angles and outer spaces of its great web are frequently filled up by the minute geometric webs of smaller species. These lesser fry appear to be tolerated, if not encouraged, by their giant neighbour, as they probably catch what would be insignificant to her, and very likely clear her web of what she rejects ; and so they all live together in harmony in a small colony.

Looking about in the undergrowth for wild flowers and fruit, and happening to rub against the stem of one of the bushes, a small rough roundish ball falls off on to the ground ; this appears exactly like a bit of round wrinkled bark, but on watching for a minute or two, it develops four pairs of legs, and runs nimbly away under cover, revealing itself as a spider, with a marvellous protective resemblance to its surroundings. Unless the creature actually moves, it is impossible to detect it, it is so exactly like a knobby bit of the brown bark.

Protective resemblance in quite a different style appears in a small spider, perfectly white in colour—thorax, legs and abdomen—which scuttles out of the corolla of certain white flowers when these are examined or shaken. This also, unless it moves, is all but invisible ; and there can be no doubt that it is thus enabled to catch the many small flies which are attracted by the honey and fragrance of the flowers. A larger and green spider, a handsome species, with a long oval abdomen striped with red, probably also a hunter, thanks to its close resemblance to green leaves and the pale reddish veining seen on many leaves, by which it is thus protected from observation until it can pounce upon its prey. This is one species of the many spiders which are caught by some of the solitary wasps, as described in Chapter VII.

As we notice these curious disguises in spiders, as well as in numbers of other living creatures, we are reminded of the old nursery tales and fables of the gift of invisibility supposed to be conferred by certain plants, or by certain charms or ceremonies. With these spiders, as well as in many other creatures, some lower, and others much higher, than them in organisation, this power of becoming at will unseen, even under the closest

observation, is no fable, but a veritable fact. There is a curious habit which I have observed in several species of Malagasy spiders which is apparently also used for protection. If they are disturbed, or if their web is shaken, they immediately throw themselves into a state of violent vibration, so that the eye cannot follow them ; and this rapid motion is continued for two or three minutes, until the supposed danger has passed away. It would seem as if this must be done to confuse a possible enemy intending to attack them.

Besides the red-spot spider, there is another kind called by the natives *Fòka* ; this is rather common in gardens and is extremely like a small crab, with a lozenge-shaped abdomen ; it is covered with tubercles, and its legs are roughened, like those of a crustacean. Its bite is followed by swelling, which spreads from the wounded part through the whole body. This dangerous spider's bite is said to be often fatal. There is another spider, apparently a species of *Mygale*, called by the people *Tàrabiby*, found fifty to sixty miles west of the capital, whose bite is also said to be dangerous, if not actually fatal. It appears to be a trap-door species. Besides this one, another species of trap-door spider is also said to be found in Imèrina, but I have not seen a specimen myself ; it is said to leave the door of its dwelling open.

The illustration given herewith will give a better idea than any mere description can of the strange shapes of many Madagascar spiders. The largest figure shows an *Epeira* of extraordinary shape ; it will be seen that the abdomen is like a set of three cones, fixed into one another and terminated by a sharpish point. A still more bizarre figure is presented by *Epeira mitralis*, as it crouches, fixed close to a branch or twig ; whether viewed from the back or front or side, it is equally "uncanny" in its appearance. Then, again, the two *Gasteracanthæ*, with their bodies much broader than they are long, are very unlike our ordinary idea of a spider, while the formidable spikes with which they are armed would appear a very efficient protection from any insect-eating bird or beast. The rather diabolical-looking *Thomisus foka*, with its crab-like pincers, is much dreaded by the Malagasy, as giving a fatal bite, if speedy remedies are not applied. Happily, it is not very common.

There is a considerable variety in the webs of Malagasy

spiders. Here is one which may be seen by hundreds, filling up the space between the sharp-pointed leaves of the aloes. At first sight it appears only a tangled mass of web, but on closer examination we see that the groundwork is a geometrical web in the centre, but as it is stretched horizontally, and not vertically, it is cup-shaped. But from it, above and below, stretches a labyrinth of lines, like the crossing and recrossing of the lianas in the forest. In the centre of this maze of lines the owner of the structure lies in wait, a small spider, handsomely marked with black and white. Not far off a grey silken bag is hung, which contains the eggs, from which a swarm of little spiders will eventually proceed, not bigger than small ants.

A word or two may be added about a very common house spider which is abundant in Imèrina. This is a rather large species, light brown in colour, but its peculiarity is that it is extremely thin and flat—a case almost of extension without thickness, as it is hardly thicker than a piece of stout paper; and so it is enabled to wait for its prey hidden in narrow and almost imperceptible cracks. It is emphatically a hunting spider and makes apparently no nest or web, and it is amusing to see the adroit way in which it will cautiously approach the edge of a crack in a board and sweep off an unwary fly.

One more curious spider may be noticed here; this has a very small body, hardly larger than a big pin's head, but it has extraordinarily long thread-like legs, covering a very wide area when compared with its minute body.

There must be still a large number of these Arachnidæ yet unknown to science, for they are very numerous in species in some localities. I remember spending an afternoon, many years ago, on a hill a few miles south of the capital, together with two or three friends, hunting spiders. We caught at least thirty different species among the bushes on the hill-top and slopes. Doubtless some of these are described and figured in one of the volumes of M. Grandidier's great work on Madagascar, still in progress. But there are probably a much larger number of these creatures still awaiting the careful observations of anyone who will note their interesting habits and homes, and their very varied appearance and structure.

I fancy my readers will now say, you have told us a good deal about the insects, and something about the reptiles and birds



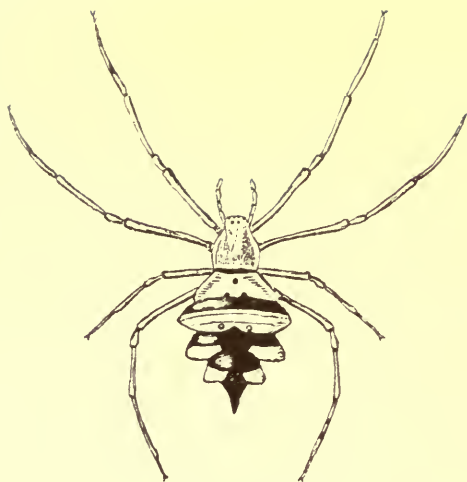
ON THE COAST LAGOONS
Pandanus (hōfa) trees

of the forest, but are there no four-footed animals in the Madagascar woods except the wild boar? Yes, there certainly are many such, for there are at least fifty species of quadrupeds already known in addition to the lemurs; but as they are, most of them, small—sixteen are species of rats and mice, and twenty-three are a kind of hedgehog, and therefore are burrowing animals—they are not at all conspicuous and must be sought for if we want to observe their habits; and the ten species of carnivora are also mostly small in size. Leaving for the present the carnivora and the rodentia, let me say here what can be said of interest about a group of small animals which are in habit and appearance much like the European hedgehogs, being of the same order (the insect-eaters), but belonging to a distinct family, the Centetidæ, which, except for one genus, are peculiar to Madagascar. Some of these animals have a covering of strong spines, while in other species this consists rather of firm prickly hairs, which, however, do not cover the whole of the body. The larger kinds, called *Tràndraka* by the Malagasy, are used by them for food, and have very much the taste of pork. (I have eaten them once or twice, but they are rather rich and greasy.) They are found in the woods, but especially in the scattered brushwood in the vicinity of the forests; and we occasionally met with two or three varieties of these harmless creatures while rambling in the outskirts of the woods. Our dog often chased and attempted to worry them, but she usually came back with her mouth and nose stuck full of prickles and looking like a pincushion, and apparently very uncomfortable. ✓

The tail-less tenrec (*Centetes ecaudatus*) is the largest and best known of its family. Its manner of life is remarkable, for it passes half the year, the cold season, in a profound sleep, in a burrow which it excavates about May or June. The female is very prolific, bringing forth from twelve to twenty-two young ones, which are bravely defended by the mother against every enemy. Their food consists chiefly of earthworms, and also of roots, fruits and insects. They sleep almost constantly during the day, while they are very active during the night; and what has been here said of the *Tràndraka* as to habits, food, etc., may be taken as representing what might be said of most of the Centetidæ. The striped tenrec is about the size of a ✓

mole, and is streaked with black and yellow, as are indeed the young of other species. The spiny tenrec is much like our European hedgehog, as it is covered with strong spines, and can roll itself up into a ball when attacked. Another species, called *Sòra* by the natives, is about five inches long. A female of this kind was one day brought to us for sale, together with eight or nine tiny young ones only a few days old. These were prettily banded with yellow and brown stripes, their hair being still soft. They were about the size of a large egg, and a most curious little family of creatures they looked. The rice tenrec inhabits the plains between the two lines of forest, and does immense injury to the rice crops by burrowing into the earth and rooting up the young plants. Another species (and genus) is strikingly modified for aquatic life, having webbed toes, and a thick and powerful tail. The smallest species known is only two inches long, with a tail of three inches. Small as the animals of this family are, they are remarkable from the fact that in no equally confined area are they represented by so many peculiar types as in Madagascar. But it is still more remarkable that the only other known genus of Centetidæ is found in the West India Islands ; two portions of the same family being separated from each other by an extensive continent as well as by a deep ocean.

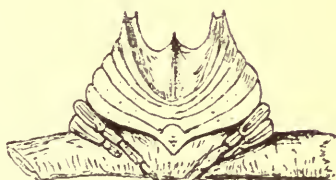
These sketches of the forest would be very incomplete without saying something about what are the most characteristic animals of Madagascar—viz. the lemurs ; for though there are a few allied forms found in Africa on the one side, and in Southern Asia on the other, this island is *the home of Lemuroid* animals. It was indeed proposed to call a supposed former continent in the Indian Ocean by the name of "Lemuria." It must be said, however, that there are few of them to be seen in the neighbourhood of the sanatorium, although the cries of some may be heard, a strange long-drawn-out wailing sound, as if of people in distress, or children crying. Yet it was always a pleasant sound to me, as a sign of life, and probably of enjoyment, in these active and harmless denizens of the woods. There are no fewer than thirty-nine different species of these animals living in Madagascar, of which twenty-nine are the true lemurs, while the other ten are closely allied to them and are lemur-like (Lemuroida). The eastern and north-eastern forests



Epeira Coquerellii



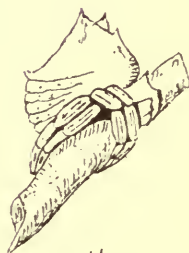
Gasteracantha madaſas ²¹⁵



Epeira mitralis
back



Gasteracantha formosa



side



front



Thomisus foka

SOME CURIOUS MADAGASCAR SPIDERS.

contain about a third of the larger number ; and M. Grandidier has pointed out that while some species have a wide range, others have a very distinctly defined habitat, which is frequently limited by two rivers, one to the north and the other to the south of their district.

Three species of the Propithecques (Lemuroidea) are known by the Malagasy under the common name of *Simpona*. They live in companies of from six to eight, and are diurnal animals ; one may see them morning and evening, when the heat is not too great, leaping in the woods from tree to tree in search of food. Often they may be surprised at sunrise, says M. Grandidier, squatting on the fork of a tree, their long legs bent under them, touching the chin, their hands resting on their knees, stretching out their arms and legs so as not to lose a single ray of the newly risen sun. The food of these animals is entirely vegetable ; and they are formed for purely arboreal life, for there is a membrane along the arms and legs which acts, to a certain extent, as a parachute, so that they make leaps of from twenty-five to thirty feet without apparent effort, and they seem to fly through the air. On the rare occasions when they leave the woods they advance by leaps, as if their feet were tied together, and have a most comical appearance as they go across a bit of open ground. One of these *simpona* is silvery-grey in colour, with black head and neck ; another is entirely white, except for its dark brown face ; and a third species is black or dark brown in colour. Of the true lemurs, I had the good fortune once to see a pair of the kind called red lemur (*Lemur varius*, var. *ruber*) cross a path near the house ; these were large and handsome animals, warm reddish-brown in colour, and took astonishing leaps in a most graceful manner ; but they were out of sight in an instant, and I can easily believe what is said by collectors, that it is easier to shoot a flying bird than a lemur in motion.

In the small streams which occur at the bottom of many of the ravines, we may often come across the curious nests of the pensile weaver-bird (*Ploceus pensilis*), which are beautifully and ingeniously constructed, shaped like an inverted chemical retort, and are suspended from the extremities of the branches of the trees and usually over running water. These nests are about a foot or fourteen inches long, the bulb giving ample room for the eggs or nestlings, and the tube, forming the

entrance from below, being three to four inches in diameter. The native name for this species, *Fòdìfèttsy*—i.e. the “Crafty Fòdy”—recognises this skill of the bird in protecting its young. The nests of another species are large and simply globular in shape, and, from thirty to forty in number, may be seen hanging from a single tree. The Madagascar bee-eater is one of the most beautiful birds to be seen in the forest, both from its elegance of form and its bright colouring of various shades of green (*Merops superciliosus*). It has a very long curved beak, and an extremely long tail, with two long feathers extending beyond the others. Its nests are excavated about a foot deep on a sand-bank bordering streams.

Another group of birds, also conspicuous from their size and colouring, must be noticed here—viz. the couas, a genus of cuckoos peculiar to Madagascar, and of which twelve species are known. They are large and handsomely coloured, and are, says M. Grandidier, strictly local in their habitat, most of them being confined to one district, out of which they are never found. Five species of coua inhabit the forests or wooded regions, while the other seven live on the plains. The blue coua (*Coua cerulea*), the only species I have seen in the upper forest, is fairly common, and is conspicuous from its colouring; while the crested coua is found all over the wooded regions. One of the twelve species goes from rock to rock, seeking the large land-shells which form its principal food (*Coua delalandei*). These molluscs it breaks by striking their shells against a stone, from which habit comes its native name of *Famàki-sìfotra*, or “snail-breaker.”

But several chapters would be required to say all that might be said of interest about the birds inhabiting the upper belt of woods, and I will not weary my readers by further descriptions, in this place at least. I will conclude this chapter by quoting a few sentences written about the wonder and mystery of the Madagascar forests by my late friend, Mr Baron; for no one knew better than he did how to explore and how to describe them.

After speaking of the fatigue of travelling in the forest, Mr Baron says :

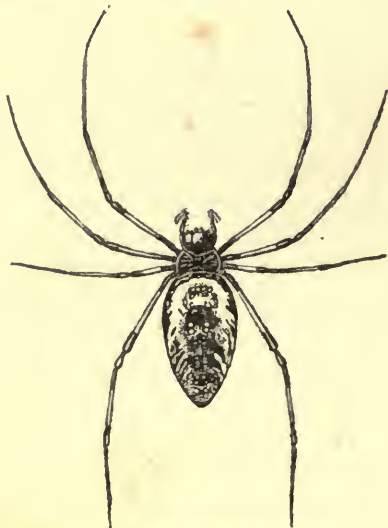
“But the true lover of Nature almost loses any sense of fatigue in the excitement and pleasure afforded by the

infinitely varied and beautiful forms of vegetable and animal life that are around him. The tall trees of innumerable species, in fierce competition with their neighbours, rearing their great trunks heavenwards that they may spread out their foliage, and open their blossoms in the light above, the fantastic foldings and twistings of the snake-like lianas, the countless shapes and tints of the leaves, the bright colours of some brilliant beetle, the delicately traced wing design of some happy butterfly, the merry chirping of some gaily adorned bird, the hurried steps of the busy little ants, the languid movements of a chameleon, with its strange skin and stranger eyes, the patient watching for prey of a red three-cornered spider, the tiny mosses and delicate ferns nestling snugly among their big brothers under the rocks—all these and a thousand other objects of interest and beauty help one to forget the exertion and the toil caused by the difficulties of the road, and make one feel that it is with a lavish and artistic hand that their great Maker has formed and bedecked them all. Moreover, there is in travelling in the forest a strange and fascinating illusion, a vague feeling of expectancy, which persistently recurs, in spite of disappointment, that somewhere on in front something of exceptional interest will be found.”

I have of course, during many journeys in Madagascar, spent many a night in small villages surrounded by forest, but I have not had quite the experiences described by Mr Baron in another passage which I shall venture to quote. Mr Baron says :

“To spend a night in the forest is an experience worth having. Bivouacked in some open glade, through which a small stream creeps lazily along, with a warm cheering fire to keep off the dew and chill of the night, one gains a quite different knowledge of the forest from that which one gets in the daytime, for all nature is not asleep even in the midnight hour. Just as darkness is setting in the fireflies with their tiny lanterns flit about among the bushes ; and the cicada, of various species, perched on the trunks of trees, commence their strange song. They are small in size, but certainly they make a big din. Well may the Malagasy proverb say : ‘Don’t be like the cicada, whose voice fills the whole valley, though the creature itself is but a mouthful.’ The sound it makes is not a buzz-z exactly, and it is not a hum-m-m. It is a deafening, unceasing, rasping, irritating

monotone. As the darkness increases, various nocturnal creatures come forth from their hiding-places, and every now and then pounce on their unconscious prey. Keep awake a while and listen to the strange and, for the most part, mysterious sounds. Suddenly there is a terrific scream. Some bird or beastie finds itself all at once in the jaws of death. And what is that ceaseless creaking throughout the night? Fancy or fear pictures some strange hobgoblin; it is, however, nothing but the leaves of a screw-pine twisted and strained by the breeze. And what is that remarkable string of sounds for all the world like water bubbling out a bottle? It is the *Toldho*, a kind of cuckoo, disturbed in its night's repose. And then, at regular intervals, 'kow-kow-koo, kow-kow-koo'; what is that? Another cuckoo, the *Kankàfotra*, which never seems to go to sleep. From the stream or marsh close by there rises the unmusical croak of the frogs. After an interval of silence, you first of all hear a single croak, then another, and another, until gradually there arises a perfect chorus, which is kept up throughout the night. The tree-frogs also, perched on the leaves, not a whit behind their cousins in the marsh, pass the night in croaking. Numerous other strange and weird noises are to be heard during the night in the forest, but from what throats they proceed it is beyond me to say."



Epeira Madagascariensis

CHAPTER XIV

ROUND ANTSIHÀNKA

SOME years ago I was asked to accompany two gentlemen on a journey to one of the then least-known provinces of Madagascar, that occupied by the Sihànaka or lake-dwellers. Two of our party took surveying instruments with them, and we were thus able to prepare the first accurate map of the Antsihànaka province.

My companions on this journey were the late Rev. Dr Mullens, then Foreign Secretary of the London Missionary Society, and the late Rev. John Pillans, one of the directors of the same society, and most pleasant and genial companions they were. Dr Mullens was very fond of a joke and enjoyed recalling humorous passages from Dickens or from *Punch*; he was also a born geographer and had a wonderful eye for the beautiful and the picturesque in scenery. Mr Pillans was a graver man, but one of solid worth and good judgment; and in the tent which we carried with us we three had many a happy evening together. Like all journeys made in those days, this one was performed in the *filanjàna* or light palanquin; and not only did Dr Mullens, with an azimuth compass, take angles and bearings for the map, but he also took a number of photographs all along our route. I had with me a good theodolite, so that we were able to compare and check each other's observations.

A few words may be said here about the position of the Antsihànaka province. Repeated reference has been already made in this book to the double belt of forest which runs for several hundred miles along the eastern side of Madagascar. A glance at a physical map of the island will show that, at about the seventeenth parallel of south latitude, this double line unites into one broader belt, becoming very wide west of Antongil Bay. It is the open country south of the junction of the two forests that forms the home of the Sihànaka tribe. This

valley or plain, for it is enclosed on each side by forest-covered ranges of hills, is about thirty miles across ; it is perfectly level, and the greater portion of it is marsh ; and at the north-eastern corner of the marsh is a fine lake called Alaotra, which communicates with the sea by the river Màningòry. It seems probable that the people came up from the coast by the valley of this river, and then settled on the edges of the plain, as their villages are most numerous around the north-eastern bay of the lake ; while there is a large tract of fertile country to the south of them which is almost entirely without inhabitants. The name of the people is no doubt derived from the character of the country they inhabit, for the verb *mihànaka* means to spread out as a liquid, as ink on blotting-paper, for instance. *Hànaka* is also used as a synonym for the words meaning lake, pool, etc. Until about the commencement of the past century the Sihànaka were independent of any external authority, but at that period they were conquered by the Hova, although not without a severe struggle. After that they quietly submitted to the central government, and until the French conquest (1895) their two chief towns were garrisoned by Hova officers and soldiers, as at the time of our visit. No European missionary had then lived in Antsihànaka, and the congregations and schools we saw, wherever we went, were largely the result of the work of a Hova evangelist, who lived among the people for two or three years.¹

After two days' journey over high moory country, and then over a range of mountains called Ambòhitsitàkatra, from which we took a number of compass bearings, we arrived on a Friday afternoon at the village of Anjozòrobé (" At much papyrus "), a place containing about seventy houses pretty closely packed together within a circular fence of prickly pear and other spiny shrubs. It was built on rising ground overlooking a level plain to the north-west, evidently a former lake-bottom, through which the river Mànanàra flows in a very serpentine course to join the Bétsibòka. We crossed the river, here about thirty yards wide, with a strong body of water, by a bridge of two massive balks of timber supported by a rough pier of stones in the centre, and then ascended by a very steep path to the neat chapel, which stood in a compound a little way from the village. We took up our quarters in this clean whitewashed building ; and here

I may remark that in former times the rude village chapels generally formed the missionary's "Travellers' Bungalow." They were usually not encumbered with pews or seats, or, indeed, much furniture or fittings of any kind ; they were more roomy than the native houses and generally much cleaner, at least they had no soot hanging in festoons from the roof ; so that they formed very convenient resting-places for a missionary traveller, and a favourable place for meeting the people and prescribing for their ailments.

We had intended to proceed northwards on the following day, but as we had to pass through the inner belt of forest and enter on entirely unknown ground, as to which we could get no definite information with regard to villages or congregations, we eventually determined to stay at Anjozòrobé over the Sunday. Saturday morning was occupied in ascending a mountain, four or five miles distant to the north (Ambòhimimàrimbé—*i.e.* "The High Uplifting One"), to take bearings, etc., and the afternoon in taking photographs of the village and river valley.

On Monday morning we resumed our journey northward, and towards midday entered the belt of forest which covers that western line of hills of which I have already spoken. We had been approaching it obliquely in a north-north-east direction for the last two days. An ascent of about five hundred feet brought us to the summit, for the road passes along the narrow knife-edge-like ridge of the very highest point, a hill called Ambàravàrambàto ("At the Stone Gateway"), having two heads of almost equal height, with a depression between them. These points, from their peculiar outline, gave us a useful landmark to connect our journey northwards with the ground we had already traversed. Soon after noon we stopped for a few minutes at the top, and had an extensive view all around us. North and south, the line of forest-covered hills dividing Imèrina from the lower plateau of Ankay stretched away on either hand into the far distance. Behind us were the bare hills and downs of Imèrina, before us the Ankay plain, many of the low hills covered, and almost every valley filled, with bright green woods. Beyond this were lines of hills increasing in height until they met the mountains of Béfòrona and Anàlamazaotra, clothed with the broader of the

two belts of forest which run down the eastern side of Madagascar. Far to the north in the dim distance we could just see the southern portion of the Antsihànaka plain. A very steep descent, first down an exceedingly rugged kind of stone staircase, and then through dense wood, hardly allowing passage for the palanquin in several places, brought us down to a charming valley between two great spurs of the hills. After about an hour more we came to a little village, where we were glad to get some rest and food after six or seven hours' hard travelling. The aneroid informed us that we had descended more than one thousand two hundred feet from the summit of the hill, and about seven hundred feet from the upper plateau of Imèrina. We had to pitch the tent in the open plain that night, for a village of which we had heard, and had expected to be a good-sized place, proved to be only a collection of eight or nine miserable huts, scattered about in twos and threes.

The following day our journey northward was over a pleasant undulating country, but almost entirely uninhabited ; here and there were solitary houses far apart from each other, but no villages. On the bare downs we frequently came across ant-hills, about two feet high and formed of the greyish soil. It is said by the people all over the island that a serpent called *Rènivitsika* (i.e. "mother of ants") is enticed by these ants into its nest, and is then fattened, killed and eaten by them. The Hova in the centre of the island, the Bètsiléô in the south, the Sàkalàva in the west, and Sihànaka in the north-east, all affirm that this is a fact ; and it seems difficult to doubt their united testimony. After a long ride of six hours we at last came to a group of six or seven houses called Andrànokòbaka, where we rested for a time and had tiffin. This place appeared to be the first of the Sihànaka villages from the south. There was an evident difference in the appearance of the people ; the women reminded me of the Bètsimisàraka on the east coast, and both men and women had their hair plaited in a great number of little ropes ending in a knot, and hanging loosely all round the head. The women and children, even those who had no kind of clothing, all had some kind of ornament : necklaces of red beads or silver chains, and armlets of silver, a striking contrast to the lower class of Hovas, who only put on ornaments on extraordinary occasions. The village smelt strongly of



SIĤÀNAKA MEN WITH MEAT BASKETS

Note how the lām̐ba is worn



A FOREST VILLAGE

Note the baskets for carrying fowls against the doorway of the house

tòaka, the native rum, and the quantities of chopped sugar-cane, from which the spirit is made, lying about the place, all told of the liking of the people for strong drink.

This indeed is one of the flagrant evils common among the Sihànaka, as it is also of many of the outlying tribes. My friend, Mr Stribling, who lived among these people for several years, gives the following incident illustrating the power which rum has over them :—

“ Calling at a village one day for shelter from a sudden storm, we were most graciously received by a native, who was decidedly ‘ the worse ’ for drink. Wishing to be sociable, however, I said to my host, ‘ Well, my friend, how many horns of rum can you drink before becoming drunk ? ’ (The Sihànaka use the horns of oxen instead of glasses, for drinking.) In a most friendly manner the man replied, ‘ Well, I can drink three hornfuls at least ’ (about one and a half quarts). ‘ How much water would you mix with it ? ’ ‘ Water ! why, we never put water into the rum, that would make it insipid.’ Thereupon, turning to a little girl about six years old, the man said, ‘ This is my daughter, a scholar in your mission school at Ambàndrika.’ ‘ And does she also drink rum ? ’ ‘ Of course, why not ? ’ He then told me that the baby, a year old, who was also present, was a son of his. ‘ And does he also drink rum ? ’ ‘ O dear, no ! he is still only a fool.’ ‘ Then he will drink it when he becomes wise ? ’ ‘ Of course he will ; we all drink it when we come to understand what is good.’ ”

We encamped again in the open grassy plain, near two or three houses and a cattle-fold ; and the following morning proceeded on our journey to the north-north-east. An hour and a half’s ride brought us to two considerable villages near an extensive rice-valley. Here we were surprised to see the fields dotted over with round stacks of rice with conical heads, much like those in an English farmyard. And we also found that here and all through Antsihànaka the rice is not transplanted, as in Imèrina, but after the ground has been trampled over by oxen the seed is sown broadcast, and the rice grows there until it is fit for cutting. After leaving these villages we began to mount a line of hills which forms the eastern boundary of the more level portion of the Ankay valley ; and on reaching its

summit we saw before us the vast green plain of Antsihànaka stretching away to the northward, level as a lake, with long lines of promontory jutting out into it from the north-west and south-east, and a few low rounded hills rising out of it like islands from a sea. In the far north-east the waters of the lake Alaotra gleamed in the sunshine. To the south and east of the plain we could see several large villages, but the chief town, Ambàtondrazàka, was hidden from view by an intervening line of hill. We crossed ridge after ridge and valley after valley, hoping each would prove the last. The path over one of these valleys, a mile and a half wide, was especially difficult; a narrow winding track amongst swamp, prickly bamboo, enormous papyrus and rushes, with here and there deep running streams, whose only bridge was a slippery round pole partly under water; so that we afterwards spoke of it as "the great dismal swamp!" But we met with others equally bad, if not worse, on our subsequent journeys round the plain, and the passage seemed not nearly so formidable on our return.

I was struck here, as well as in many other parts of the district, by the remarkable and varied fragrance of the wild plants growing among the grass. The scents appeared to me as equally a convincing proof as the sights and sounds that one was really in a tropical country. And here, as we have been travelling for several days over country that is chiefly bare moor (except the narrow belt of forest at the "Stone Gateway"), I may appropriately say something about the grasses of Madagascar, which must attract the attention of every observant traveller. They are of great variety and beauty, and prominent among them are different species of *Véro*. Of these the one called simply *Véro* rises to a height of eight or ten feet, and has a head of flowers somewhat like oats, but much longer. This tall grass presents a varied appearance at different stages of its growth. When in full flower, the heads contain a large number of oat-like seeds with long awns, but later on the seeds fall off, and at the head of each little branchlet there appears a minute tuft of feathery plumes, like little stars, giving the grass quite a different aspect from its first one. Another species, called *Vérontsànjy*, has a still more beautiful floral crown, and is as tall as the first-named one, but not so common. These two grasses, when seen in a mass, give a warm brown tint to the spots where

they grow. In some parts, however, a much shorter grass, of a pale buff colour, is the prevailing growth. In other places, another very tall grass called *Famòà* flourishes; this is a light graceful grass, with fine branchlets from its head, and the seeds showing prominently; and the whole is of a delicate pea-green colour. Then there are other grasses, which are richly marked with shades of dark red or purple, displaying masses of these tints when seen from a little distance. The shorter grasses are not less beautiful than the taller species just mentioned; but without coloured drawings it is impossible to give any adequate idea of their charm and variety.

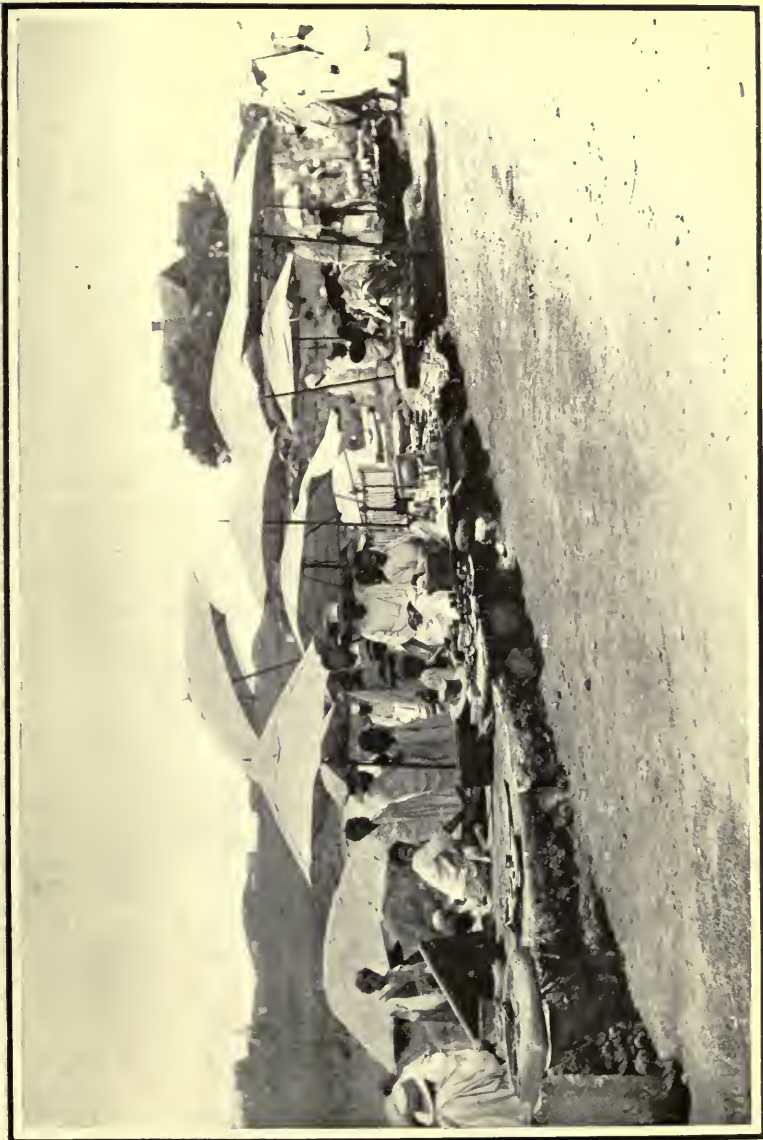
There is one thing especially which strikes a European newly come into the country with regard to the Madagascar grasses, and that is, the height to which they grow, if left undisturbed. In sheltered valleys and other places not reached by the fires which sweep over the downs in the dry season, the grass grows considerably above one's head, so that I have felt how soon one might be lost in certain conditions. After the year of rebellion against French rule in 1896, I found the véro and other grasses grown as high as I was when sitting in my palanquin—about eight feet above the ground. For several months large tracts of country had been desolate and left uncultivated, and were returning to a state of nature. And in many places, at every few yards, we disturbed coveys of partridges or quails or other wild birds, which had greatly multiplied in the depopulated country.

Soon after four o'clock we mounted the last low ridge, and Ambàtondrazàka lay before us, about a mile and a half distant. The town, which consisted of about four hundred houses, is situated on a low peninsula projecting from the hills on the southern side of the plain. It had a pleasant, civilised appearance after the wretched huts we had seen for the last two or three days. A broad road running down from the hill seemed to divide the town into two pretty nearly equal parts. West of this road a large substantial chapel showed out conspicuously, and on the opposite side was the square palisaded enclosure called the *ròva*, filled with the houses of the Hova officers and soldiers who formed the garrison of the place. At the north-east corner of the enclosure the *làpa*, or government house, a two-storeyed building surrounded by verandahs, stood out prominent above the rows of smaller houses. We soon estab-

lished ourselves inside the chapel, which was well built of clay walls with brick gables, ninety feet long by thirty-six broad, with good doors and windows, all well finished. The walls were smoothly plastered and whitened, and the floor was covered with fine mats, all sewn together.

Sending in our letters of introduction to the Governor, we were in a few minutes invited to go over and see him. Passing through the double lines of palisading and the rows of Hova houses, we came to the *làpa*, inside an inner enclosure of its own. Entering the large room on the ground floor, we found the Governor waiting to receive us. His chief officers and the civil authorities were seated round two sides of the room, and a number of the lower class squatted on the floor on the third side, while on the fourth side three chairs were placed for us. As soon as we were seated, the Governor, a tall elderly man, receiving us most cordially, addressed us with a formal speech, after the custom of the Malagasy officials to anyone who came from the capital; and as this may serve as an example of the way in which we were received in all the principal places, I will give it pretty fully; it was in the following form:—"Since you, gentlemen, have come from the capital, we ask of you, How is Queen Rànavàlona, sovereign of the land? How is Rainibaiàrivòny, Prime Minister, protector of the kingdom? How is our father, Rainingòry (the oldest officer in the army, nearly a hundred years old)? How is Rainimàharàvo, Chief Secretary of State, chief of the officers of the palace? How is Rabé (son of the preceding)? How is the kingdom of Ambòhimànga and Antanànarivo (the ancient and modern capitals)? How are 'the-under-the-heaven' (the people, the subjects)? How are you, our friends? And how is your fatigue after your journey?" etc. To these inquiries I, as interpreter to the expedition, gravely replied *seriatim*, saying that her Majesty was well, that the Prime Minister was well, etc., etc., and then inquired how the Governor and his officers, and the people of the town and neighbourhood were. We then had more general and less formal conversation, in which I explained the objects of our visit to Antsihànaka, and our proposed route round the district.

The Governor then courteously led us by the hand back to the chapel, where he joined us in our dinner; and as soon as that was finished asked us to come outside. Here we found a



A WAYSIDE MARKET

The umbrellas are to protect the vendors and goods from the sun. Beef, soap, candles, cooked rice, manioc, etc., are exposed for sale



quantity of provisions brought for us and our bearers ; baskets of rice, geese, fowls, yams, and a large fat pig (a most unwilling offering *he* was, and loudly protested against the whole business). In a formal speech, as soon as silence could be obtained, the Governor offered these things to us, saying that the provisions presented were not theirs, but the Queen's, the Prime Minister's, etc., etc., while *they* only took charge of it all (a polite and loyal fiction, by the way, meaning nothing). We found a comfortable (if somewhat airy) bedroom in the spacious chapel, which formed a pleasant contrast to the confinement of our little tent of eleven feet square.

The next day, Thursday, was market-day, and a number of people from the country were collected together buying and selling on an open piece of rising ground to the south of the town. The morning we devoted to inspecting the place, ascertaining the number of houses, and taking bearings, observations and photographs from a point half-a-mile to the east of the market. Our proceedings caused intense interest, as the camera, theodolite, etc., were carried past ; business came to a standstill for some time, and a glance at the crowd through the field-glass showed rows of dark faces all turned in our direction, intently watching our mysterious proceedings. We afterwards walked through the market, hoping to find some articles of food or manufacture new to us ; but there was not much that differed from what may be seen every day in Imèrina. In fruit I fancied I had found something new—viz. what appeared like a kind of small banana with black skin ; but more minute inspection showed that the supposed fruits were small fish from the lake, smoke-dried, strung on a strong reed. Some large wooden spoons with tin ornaments on the handles reminded me of those made by the Bètsiléo. Bananas, very large and fine, seemed the most plentiful fruit ; sugar-cane grows to a great size, ten to twelve feet high ; and from what we saw all round Antsihànaka it appeared a most fertile district, with rich alluvial soil ; were the whole marsh drained and brought under cultivation, as the marshy plain to the west and north-west of the capital has been, it would support a population many times greater than that which inhabits Imérina. All round Ambàtondrazàka many hundred acres of the level are occupied by rice-fields, and it is the same in the neighbourhood of all the

villages bordering the plain ; although a large proportion of the area is still covered with marsh, reeds, rushes and papyrus. From the rising ground we could count numerous herds of fine cattle, generally from seventy to eighty in each herd, and wherever we went we found cattle in great abundance feeding on the rich pasture. Large numbers of these cattle belonged to rich people in Imèrina. One noble was said to have nearly ten thousand ; others had five thousand ; many people had a thousand, and the majority of the Sihànaka had at least a hundred each.

After our usual employments of school examination, conversation with the pastor and others, and renewed presents of food, on Friday morning we set off on our circuit round the plain to visit as many of the congregations, and see as much of the country and the position of the Sihànaka villages, as was possible in six days, as our time was limited to that period. Proceeding first westward, and skirting the edge of the level ground, we passed for some distance through swamp, with dense thickets of *hèrana* and *zozòro*, the first being, as already seen in Imèrina, a strong sedge extensively used for roofing, and the other, a species of papyrus, employed for a variety of purposes. This latter grows here to a great size, some ten or twelve feet high, with a triangular and exceedingly tough stem, about two and a half inches each way, nearly double the size it attains in the cooler Imèrina province.

We had to cross numerous little streams by rickety bridges of plank. From the level of the rice-fields the plain stretched northward like an immense green lake ; the rotundity of the earth was as clearly seen from the perfect level as it is from the surface of the sea, for the distant low hills appeared like detached islands with nothing to connect their bases. Our course lay west by north-west, cutting diagonally across several of those promontories formed by the parallel lines of hills which run down each side of the Ankay valley. Every village of the Sihànaka has near its entrance a group of two or three tall straight trunks of trees fixed in the ground, varying from thirty to fifty feet in height ; the top of these has the appearance of an enormous pair of horns, for the fork of a tree is fixed to the pole, and each branch is sharpened to a fine point. Besides these, there are generally half-a-dozen lower poles, on

which are fixed a number of the skulls and horns of bullocks killed at the funeral of the people of whom these poles are the memorial. One thing struck us as curious : several of the higher poles had small tin trunks, generally painted oak colour, impaled on one point of the fork ; and in several instances baskets and mats were also placed on a railing of wood close to the poles supporting the bullock horns. These various articles were the property of the deceased, and put near his grave with the hope of their being of some benefit to his spirit ; or perhaps from the idea, common to most of the Malagasy tribes, of there being pollution attached to anything connected with the dead. In several cases, on the very highest point of the lofty poles, there was a small tin fixed, having a strong resemblance to those we import containing jam or preserved provisions.¹ As among many Eastern peoples, so in Madagascar, the horn is a symbol of power and protection ; the native army was termed *tandroky ny fanjakàna*—"horns of the kingdom."

Some of the cattle we saw were magnificent animals, and it is not strange that the bull was used frequently in public speeches, as an emblem of strength, as it is the largest of all the animals known to the Malagasy. It frequently occurs in this sense in the formulæ and the songs connected with the circumcision ceremonial ; for the observance of this native custom was a time of very great importance in the old native regime. Bull-fighting was a favourite amusement with the Malagasy sovereigns ; and in digging the foundations for a new gateway to the palace yard at Antanànarivo, the remains of a bull were discovered, wrapped up in a red silk *làmba*, the same style of burial as that employed for rich people. This was the honour paid to a famous fighting bull belonging to Queen Rànavàlona I. It seems pretty certain that anciently the killing of an ox was regarded as a semi-religious or sacrificial observance, and only the chief of a tribe was allowed to do this, as priest of his people. Robert Drury, an English lad who, with others, was wrecked on the south-west coast of Madagascar in 1702, and remained in the country as a slave for fifteen years, gives many particulars about this custom of the southern Sàkalàva people.

An old Malagasy saying thus describes the various uses of the different portions of an ox when killed : "The ox is the chief of the animals kept by the people, and they are very beautiful

in this country. Our forefathers here knew well how it should be used, and they said thus, when they invoked a blessing (at the circumcision): The ox's horns go to the spoon-maker; its molar teeth to the mat-maker (for smoothing out the *zozdro* peel); its ears are for making medicine for nettle-rash; its hump for making ointment; its rump to the sovereign; its feet to the oil-maker; its spleen to the old man; its liver to the old woman; its lungs to the son-in-law; its intestines to those who brought the ropes; its neck to him who brought the axe; its haunch to the crier; its tail to the weaver; its suet to the soap-maker; its skin to the drummer; its head to the speech-maker; its eyes to be made into beads (used in the divination), and its hoofs to the gun-maker."

Our next morning's ride brought us to Ambòhidèhilàhy, a large village of a hundred and twenty or a hundred and thirty houses, occupying the northern end of one of the promontories.

For the first time since we had left Ambòhimànga we had a meal in an ordinary house, and could notice the arrangement of a Sihànaka dwelling. I immediately observed that instead of there being *one* post at each end and at the centre of the house to support the ridge, as in the Imèrina houses, this had *three* at each gable, just as the Bétsimisàraka have; another confirmation, by the way, of my belief, that the Sihànaka are connected with the coast tribes, and have come up from the sea and settled on the margin of the fertile plain. Instead of the one door and window on the west side, as in the Hova houses, the Sihànaka make two doors on that side, with high thresholds, dividing it into three equal parts, and a low door on the eastern side, coming where the fixed bedstead is placed in Imèrina. Here the bedstead was at the south-east instead of the north-east corner; and the hearth, with its framework above for supporting property of various kinds, at the south-east instead of the mid-west side of the house.

After dinner we set off over level ground for Manàkambahiny, a village nearly south from us, which we could see on a low hill forming the extremity of the high ridge bounding the Mangòro valley to the west. We found that the small rivers between the parallel ranges of hills spread out into many shallow streams over a wide surface, forming a swamp with luxuriant rushes and vegetation. The wild birds seemed plentiful here. In several

places was a kind of snare for taking them on the wing, consisting of several stout bamboos fixed in the ground a few feet apart, with cords stretched between them, and loops of string suspended from these cords. We were only able to stay a short time at the village, and then pushed on, crossing the level ground at the southern extremity of the Antsihànaka plain and coming at sunset to Ambòdinònoka, a good-sized village on its western edge. Here we had reached our farthest south in our journey round the province.

We have just seen the interior of a Sihànaka house, and we ought to have noticed the fine and strong mats with which they are furnished. From the immense extent of marsh, the material for making these is very abundant, and all women can make them; so no Sihànaka *buys* a mat, for they think that a disgrace. Of the *zozòro* outer peel, or skin, the very long mats called the Queen's are made, which are from eighteen feet to twenty-four feet long. The houses of many people here are clean and neat from the abundance of such mats. The largest kind of *zozòro*, called *tèry*, is as strong as wood, and the firm triangular stems are used for the walls of the houses.

We were off early on Saturday morning, for, as we wished to get to the second town in size, Ampàrafàravòla, for Sunday, we had a long day's journey northward of nine or ten hours before us. We were now skirting the western edge of the great level, now and then crossing patches of swamp, and then following the windings of a small river, which we had at last to cross by canoes. The whole country appeared to abound with wild birds of different kinds—herons, black and white storks, wild geese, wild ducks, partridges and many others. The fen country of the eastern midland counties of England, before the great drainage works were carried out and the waters led off to the sea, must have been very much like this Antsihànaka plain, which is certainly a paradise for sportsmen. There are said to be no fewer than thirty-four species of aquatic birds found on the Alaotra lake and in the surrounding marshy country. In the little museum at the L.M.S. College at Antanànarivo we have, among other Malagasy birds' eggs, a number from Antsihànaka, chiefly of water-fowl; most of these are white, showing probably that they are well protected and so have no need of imitative colouring.

Of these numerous ducks and geese, perhaps the whistling teal is the most common, not only in this province, but also in other marshy regions. In the western part of Imèrina the *Tsiriry*, as it is called, may be seen in flocks of five hundred together, so that a certain district probably gets its name of "Bé (many) tsiriry" from their numbers. At evening this bird and a tree duck (*Tahia*) settle down in such numbers along the shore of the lake that one cannot walk by the water-side, for the ground is black with them. The tsiriry builds its nest on hillocks among the grass, and the young birds are taken to the water as soon as hatched. Another bird, the humped duck (*Aròsy*), lays its eggs in the crevices of rocks. Many of the native names of these wild fowl are imitative of their screaming cry; others are descriptive, as "white-wings," "handsome-bird," "white-eyes," "many-shields," etc. Besides the above-mentioned birds, there are also coots, water-hens, herons, ibises, grebes, snipes and curlews in the lake and the marshes. Of the white-backed duck (*Tafiotra*) the natives say that the female bird experiences some difficulty in the laying of her eggs, which are very large in proportion to the size of her body; this is said to make her faint and become unconscious, so that she may be taken off her nest with the hand. On account of this peculiarity, the duck is *jàdy*, or tabooed, by the native women, who think that they would experience a similar difficulty in child-birth were they to eat the bird.

From the abundance of water-birds in this province, the keeping of ducks and geese is an important occupation of the Sihànaka. Geese are greatly esteemed, and alive or killed are always presented as a mark of respect to strangers. On account of their abundance, goose quills for pens, as well as chillies and fine long mats, formed the tribute formerly paid by the people to the queen at Antanànarivo. Guinea-fowls are also plentiful and are found in flocks of from twenty to thirty together, but chiefly in unfrequented places.

After about two hours and a half's journey we arrived at Ambòhitròmby, a large village of nearly a hundred houses, situated on a rounded hill which rose like an island from the plain. We were formally received by an old man in a red *làmba*, the chief of the village, in the presence of a large number

of people, and the accustomed speech-making had to be gone through. We then went into the chapel, a long, narrow and low rush building, where the scholars and most of the women were assembled. On going out of the chapel we were asked to meet the chief people again to receive beef, rice, etc. This was done with a formality and respect exceeding that shown on any previous occasion. A mat was spread on an open space, on this three chairs were placed for us, and in front of this, on another mat, were arranged the provisions. Speech-making, compliments and replies then followed as usual.

After tiffin, and taking some compass observations, we left Ambòhitròmby soon after twelve o'clock, keeping still along the western shore of the plain, and several times crossing bays which run westward between the hills. Here we had much floundering about in the bog, and crossing of cranky wooden bridges of the primitive single round-pole construction. We passed Mòraràno and Moraféno, good-sized villages, but were unable to stop at either place, as they were both a little way out of the direct road, and we were pressed for time. The population appeared considerable about this part of the plain, for there were many other villages at no great distance, and a very large extent of its margin was cultivated, the stacks of rice dotting over the level surface for two or three miles to the eastward, and for a long way north and south. After three or four hours' walking and riding we turned to the north-east, crossing a great bay formed by one of the long promontories which stretch into the level from the north-west as well as from the south-east shores of the plain. These have evidently in an earlier (geological) period formed continuous lines of hills, for they do not run in the same direction as the main valley or depression of the country, but cut it at an angle of about forty-five degrees—that is to say, while the general direction of the Antsihànaka valley is north-north-east and south-south-west, the lines of hills on either side have a bearing of north-north-west and south-south-east. This is seen very distinctly in the map of the district made on my return home: for many of the ridges seem to be broken off more or less abruptly by the level ground, and then to be continued on the other side of the plain. It seemed impossible to avoid the conclusion that by some great convulsion in long-past geologic ages a vast rent and depression

had been made across the lines of hills in a diagonal direction ; while the water-worn and wasted remains of some few of these towards the south, forming a line of low detached hills, suggested that probably the action of water, either as an arm of the sea running up the Ankay valley, or a great river, had completed what was commenced by more violent agencies. The unmistakable evidence of former volcanic action, in the presence of extinct craters and lava streams to the west, north and north-east of the plain, seems to show what was the agency which caused this great depression of the surface.

Half-an-hour brought us to the end of the promontory, which was like an enormous dyke or sea-wall, one face having a steep slope, and the other a long gentle rise. It was a pleasant and smooth level road along the top of this great natural embankment to the north-west. From it we had a delightful view, for the great flat surface of the plain looked like an immense green lake, from which the distant eastern line of hills seemed to rise like shores out of a green expanse of water. The high mountains beyond these were lit up by afternoon sunlight, and the western side or a still larger and higher promontory to the east of us, broken up by lateral buttresses, produced charming effects of light and shadow, and variety of colour. At the head of the bay formed by these two long points we could see the high rounded hill which rises above Ampàrafàravòla, and after a time the little town itself began to show above the plain.

At a little before five o'clock we came to a hollow at the end of the promontory, with a long piece of water dividing it from a steep abrupt hill, on which the large village of Ambòhipéno is situated. This place had a clay wall surrounding it, and contained about ninety houses. The " road " to it is the water just mentioned, about four feet wide, where the papyrus had been cut away ; this being past, the path was up a steep clay slope. As we got near the village, we could see a number of people assembled to meet us, and on arriving at the top had a most pleasing reception. As we cleared the water and began to ascend, the singers struck up a hymn ; they were all seated on one side of the road, the school-children on the other, while a little farther on were a crowd of people headed by the elderly men of the place. One of these, the judge of the district, a pleasant old man, then received us with the usual speeches, to

which I had of course to reply. After a few minutes' delay, and promising to come and preach to them on the following afternoon, we pushed on, for it was near sunset, and we had still three or four miles to traverse before reaching our destination.

It was about an hour after sundown before we reached Ampàrà-fàravòla, but a bright moon near the full prevented any difficulty in travelling. The town itself was almost entirely Hova, and consisted of about ninety houses in a square stockade of palisading, a double line of which ran all around it ; but there were as many more Sihànaka houses within half-a-mile of the *ròva*, and two or three small villages at no great distance. On the west side of the town was a large, well-built, clay chapel, not then finished. Our first look at it, without any doors or windows, made us doubtful whether we could use it as a lodging, especially as the evening breeze blew sharply through the numerous openings ; however, as we found there were temporary doors and shutters of *zozòro*, which filled them up to some extent, we decided that we had better stay in it. A few minutes after our arrival, the lieutenant-governor of the district and his attendants came out of the *ròva* to meet us ; and then, of course, came loyal inquiries and polite speeches and, after a little time, beef, rice and poultry, etc. We were glad at last to get some tea, but we found the chapel very windy and letting in far too many mosquitoes to be pleasant, so we pitched the tent at the far end of the building as a sleeping apartment, and by dexterous management Mr Pillans and I stole a march on our bloodthirsty little tormentors, and managed to get a good night's rest ; while the doctor secured the same under the protection of his mosquito net.

On Sunday morning the people assembled early (rather too early for us) outside the chapel ; and as soon as we had breakfasted, stowed away our packages, beds, etc., at the farther end, and covered them over with our tent to make things tidy, we let the people in. Mr Pillans' gorgeous rug again did duty as covering for the rough little table which served as a reading-desk, while the doctor's photographic chemical box made it a convenient height. The chapel was soon well filled with people, about four hundred and fifty in number ; they came in following the governor and his officers, who took their seats first. Then came the commander's wife, a very stout, pleasant-looking

lady, who, with two or three others, were dressed in European style, as also were the chief men of the congregation. The ladies, however, did not patronise chairs, but had cushions laid on the floor. About half the congregation seemed to be Sihànaka, the rest were Hovas. As soon as service was over, the singers begged that I would teach them a new tune ; so, as at other places, the large paper copy of one, which was then new and very popular at the capital, was brought out, and we practised it until we had to ask them to let our lunch be got ready. They then removed into the schoolhouse and sang away until it was almost time for the afternoon service ; and then again in the evening until late at night. They also learned another new tune and hymn ; and not only on Sunday night, but early next morning, they were still at these two tunes, and the last thing heard as we left the place was, " There is a happy land," etc., over and over again.

In the afternoon Mr Pillans and I set off to preach to the people at Ambòhipéno, who had received us so pleasantly on the preceding evening. We wanted to give our own men a perfect rest, and so got some Sihànaka bearers. They jolted us not a little ; carrying logs of timber was much more in their line than carrying English missionaries. However, we got there quickly and found the little chapel filled with people waiting for us. On our way to and fro we noticed a peculiar appearance in the grass, as if small handfuls of it were tied together in a bundle, while still growing. On examining a tuft of this, we found the unusual appearance was caused by a small mass of fibres growing around, and the long awns intertwining, involving the neighbouring grasses in their clasp ; the end of each is armed with a sharp and barbed point, fine and strong enough to pierce the skin. This grass (*Andropogon contortus*) the natives call *Léfon-dàmbo* ("wild-hog's spear"). In walking among this grass the awns cling to one's trousers by hundreds, and gradually make their way through to the skin, causing a pricking like so many pins. Almost as annoying, although not so painful, is a plant called *Anantsinàhy*, which is found all over the central province, and of which the small dry seeds, called *Tsipòlotra*, are furnished with fine prickles, which make the seeds stick to your clothes by scores, as you pass through any piece of waste ground.

On getting back to Amparafàravòla, we found that the Governor wished us to dine with him and his officers in a small house which then served as the *lòpa*. In the courtyard was a little shed, much out of repair, in which was a small cannon mounted on a very large carriage, one of those made by M. Laborde for the old queen. At some of the places we subsequently visited, after the usual loyal inquiries for the queen, great officers, and for the governor and lieutenant-governor of the Sihànaka, inquiry was also made as to the welfare of this little two-pounder gun ! We *might* have replied, but did not, that a cleaning now and then, and a little more thatch on the roof of its shed, would probably tend to prolong its existence and conduce to its general well-being. Our dinner was served in thoroughly native style, being cooked in the same place where we ate it, and with about a score of people helping to serve us guests, three in number. They gave us rice and some excellently cooked beef and turkey, and milk to drink. The chief cook would not allow us to make any permanent impression on the heaped-up piles of rice on our plates, for every few minutes they were replenished by fresh supplies of rice and gravy, so we were obliged at last to relinquish the unequal contest. Before dinner they came to ask us if the band should play during the entertainment (as is customary when the great people in Imèrina give feasts) ; but as I felt doubtful as to the character of the tunes that the bandmaster might have available for the occasion, I said that, being Sunday, it might be well to omit the compliment ; but I very readily agreed to their suggestion that the singers should sing a hymn tune instead, which they did outside the house. After doing justice to the fare, we returned to our chapel lodgings, greatly pleased with much we had seen during the day.

¹ Subsequently, my friends, the late Rev. J. Pearse and his wife, lived and did a great work, both medical and religious, among the Sihànaka for several years ; and after them, the late Rev. E. H. Stribling and other missionaries continued that work until 1895. For some years past Christian teaching has been carried on by Malagasy sent by the native missionary society.

² It may be remarked here how ubiquitous are the disused tins in which various provisions made by English manufacturers

are packed. We were amused during our tour by the evidence of this in different parts of Antsihànaka. It is usual in the Malagasy congregations for a small tin box to be fixed near the door of the church to receive money contributions and "the weekly offering." We found that in some villages old jam tins were employed for this purpose ; in others again sardine boxes were the favourite receptacle for the gifts of the congregation ; while in yet other districts a military feeling was apparently the prominent one, for old powder flasks were suspended from the wall for the Sunday contributions.

CHAPTER XV

LAKE SCENERY

WE were up early on Monday morning, the doctor to prepare paper for photographs, Mr Pillans and I to survey. He and I walked up a rounded scarped hill, about a mile to the north-east of the town. This was the only place we had seen in the neighbourhood which showed this rude kind of fortress, so common on the hills of Imèrina and the Bètsiléo country. It was a dull cloudy morning, and we could not get any distant points, but took the bearings of a few neighbouring villages. But we were greatly interested to find that the hill had certainly been the centre of volcanic action, was, in fact, an extinct crater, for large masses of lava were scattered all over the hill, from the base to the summit. We afterwards found, as we proceeded on our journey round its north-western slopes, that the crater was on that side, and that from it a stream of molten rock had poured down, spreading over a considerable surface of ground. After bidding our good friends farewell, although they much wished to keep us longer, we left at nine o'clock, still going northward. We crossed over the head of the large bay of the plain formed by the long promontory, passed a little cluster of villages called Mòraràno, and then ascended the ridge of hills, coming out on some very high ground which forms the western boundary or shore of this part of the plain. From it we had an extensive view over the great level surface, and could see the whole length of the Alaotra lake from north to south. There was a fine variety of outline in the eastern line of hills and mountains, and towards the north end of the plain there was a great opening between the hills, showing the valley through which the Máningòry river runs from the lake to the sea. We soon left the high ground and came down to the plain, skirting its edge, generally on low hills, and occasionally crossing great arms of it running westward. Several of these were very boggy and difficult to cross,

with the most complicated and impracticable bridges we had yet seen, even in Antsihànaka ; some of them were in three stages, one a steepish ascent, the middle span on the level, and another going down again into *water*, not on to dry land, and none boasting more than a slippery round pole as roadway.

Our journey of six hours and three quarters to-day was only broken by half-an-hour's halt on a low hill to take observations ; indeed there was no village, nor even a house, where we could have stayed, for we were travelling over a perfectly uninhabited country. After we left Mòraràno, about an hour north of Ampàrafàravòla, we saw not a single human habitation nor trace of cultivation, although there were numerous fertile and spacious valleys, until we arrived at Ambòhijànahàry. The only object we saw that gave any sign of man's presence was a large herd of fine cattle. I was afterwards told of a curious custom formerly practised by the Sihànaka at the time of the circumcision. They used to choose one of the largest oxen to be found and sharpened his horns to a fine point ; after two or three days' continuous drinking, when they had got perfectly maddened with spirits and were ready for any foolhardy adventure, a party would rush out to attack this ox, but without any weapons. As the animal became infuriated, he of course defended himself by goring his enemies, many of whom he generally seriously hurt, and some occasionally killed outright, while the man who escaped without injury was considered as born under a lucky star, and was resorted to by numbers of people to give them charms to protect them from various kinds of calamity.

Soon after four o'clock we reached Ambòhijànahàry, a large village of about a hundred houses, on rising ground, and approached by a long narrow passage between dense thickets of prickly pear. It is a poor dirty place, and the chapel the smallest one we had yet seen in the district, being only twenty-two feet by sixteen wide. However, it was clean and neatly matted, and after stopping up a door and a window on the windward side we put up the tent as a canopy for sleeping under, as the gables were exceedingly well ventilated. Then came speeches, beef, etc., etc., and replies as usual, *my* oratorical efforts becoming very brief ; my companions remarked that the flowery parts of my speeches in reply were gradually

curtailed as we proceeded farther on our journey. To the north of the village is a lofty point, called Ankitsika ; it has a double cone-shaped outline—that is, a small cone upon a large truncated one—and is doubtless of volcanic origin. The word Ankitsika means “at a cave,” and there is said to be a cave at the top, where, in former times, the people took refuge when their enemies, the Sàkalàva, made a raid upon them.

The village which we had now come to was “our farthest north,” for from here we began to turn our faces homewards ; and as we had now seen the largest villages in the province, I may as well say something here about the Sihànaka, and their occupations and means of subsistence.

Their occupations are, chiefly, tending cattle, growing rice, fishing, and making *tòaka* (rum). Almost every family keeps cattle, save the very poorest, and there is nothing the people like better than to follow their herds and camp out in the pastures with their wives and children. The day of cutting the ears of the young animals (so as to distinguish them from those of the queen) was always kept as a day of rejoicing, killing oxen, and feasting. Yet very few milk their cattle, for they prefer the broth made from fish to milk.

As we went round the outside edge of the plain, we saw a large extent of rice ground under cultivation ; but the people do not dig the soil, or transplant the rice, as is the custom in Imèrina, but cultivate their fields in the following way. First of all they make a number of low earthen banks, which are intended to hold the water. That being done, oxen are driven over the ground to be planted, where the water is a few inches deep, and when the soil has been well turned over, then the rice is sown ; and there it is left until it is reaped, without transplanting or weeding. When the rice has been reaped, it is heaped together in round stacks, which are of a considerable size. When quite dry, the grain is threshed out with a stick, two men or more striking in regular turn. The rice is not stored in pits, as in Imèrina, but in an enormous kind of basket or round enclosure, made of papyrus plaited together, and about eight feet high and from twenty to thirty feet in diameter. These are in the fields, and are roofed over ; and rice being so cheap and plentiful with them, the people do not measure the rice itself, but they

reckon it by the number of these *vòlovàry*, of which the richer Sihànaka have seven or eight or more.

Catching fish in the lake and in the numerous streams and pieces of water is the business of both men and women. The men angle for eels, the women dredge for small fish in the shallow water (using a kind of basket like a large sieve), and the little children fish with bait. All the children have a tiny canoe, in which they go fishing in the early morning from six to nine o'clock, when they return home, for their small canoes would be upset by the wind and waves as the day advances. The women catch, by dredging, small fish called *tòho* and also shrimps. These they dry in the sun, sew up in baskets, and take for sale to the markets, many people becoming wealthy by their sale. Until a few years ago all sales were done by barter, for little money was employed. And it is the custom for the men not to bring home what they have caught, but to leave it by the waterside for the women to fetch.

There is abundance of *tòaka* (rum) made in Antsihànaka, and its manufacture is the work of poor old men and women and (formerly) of slaves. In every house it is to be found, for they think it shows a want of respect to visitors if they have not plenty of *tòaka* to give them. Whatever be the business in hand, whether funerals or rejoicings, nothing can be done without drinking *tòaka* (see an earlier paragraph).

We left Ambòhijànahàry on Tuesday morning and turned eastward. Our road lay through low swampy ground, often wading through water and floundering through bog. But there was also a large extent of land covered with rice-fields, and we passed several villages. We left the lines of hills, which come down and terminate abruptly at the edge of the plain. Rain fell during the last half of the journey and a thick mist shut out everything from view ; there was water above and around, and water and bog below, so it was the most uncomfortable of all our journeys. The only objects to interest were the clouds of birds, which flew over our heads in immense numbers in every direction. Soon after ten o'clock we got to a village of seventy or eighty houses, called very inappropriately, Ambòhitsàra ("good town"), for it was quite in the swamp, raised only a few inches above the level, and surrounded by water, most of it stagnant. Here the people of the village, in

their speech to us, spoke of our staying there that night, and crossing the lake the following morning ; but as it was still early in the day, and the water was not an hour distant, we felt most unwilling to stop, especially as we feared risk of fever by staying the night in such a low and damp situation. We therefore told them that we must, if possible, get across the lake that day, and requested them to lose no time in getting sufficient canoes to take us over. After tiffin, we determined to go and see for ourselves, and with much difficulty got our men off. The path was better than in the morning, a large extent of land here being fine pasture and covered with cattle.

Three-quarters of an hour brought us to the lake, a beautiful expanse of water, but only one small canoe was visible, and a stiff breeze from the east had raised waves of a size quite formidable to such cranky craft as Malagasy canoes are. The shore opposite to us seemed from three to four miles distant ; to the northward the water extended for several miles, with bays running up among the hills, and a large arm turning eastward in the direction of the valley through which the river draining the lake flows into the sea. Many of the villages on the rising ground across the water were seen quite distinctly (for it had turned out a lovely afternoon) and seemed large places. A considerable portion of the population is indeed massed round this north-east corner of the lake, and we regretted being obliged to leave so many large villages unvisited, but our time would not allow us to go round the head of the Alaotra. The picture was a pleasant one from the shore ; the expanse of blue water, with the waves dancing and sparkling in the sunlight ; the villages on the green hills across the lake ; and behind them grand masses of mountain, with a good deal of dark forest capping them. To the north of the Māningòry valley was distinctly visible an extinct volcanic crater, with a large portion of one of its sides broken down and revealing the immense cup-shaped hollow within. The aneroid showed that the surface of the lake was twenty-six hundred feet above the sea, about nineteen hundred feet below the height of the capital.

We waited and waited on the shore, sweeping the opposite banks with our telescopes for signs of approaching canoes, but looked in vain ; nothing like a canoe was to be seen, and the waves got higher and higher ; evidently it would not have been

safe to cross so late in the day, when the sea breeze, as is the case also on the coast lagoons, makes a considerable swell, and crossing is practicable only for the largest canoes. And while we are waiting, we may remark that this Lake Alaotra is the largest one in Madagascar, and is about twenty-five miles long, by four or five in average breadth. But as the level marshy land to the west and south is only a few inches above its surface, the lake is of much greater extent in the wet season. It receives the drainage of the northern portion of the Ankay plain, so that a considerable body of water must issue from its north-eastern arm and flow towards the sea. According to the Rev. L. Dahle, the name "Alaotra" is probably the Arabic *Al-lutat*, "the dashing of the waves," the sea. The Arabs of the Comoro Islands and East Africa are known among the Malagasy as the "Taloatra"—*i.e.* "those from beyond the ocean." ¹

The afternoon wore on ; the doctor took photographs of the opposite shore ; Mr Pillans and I took bearings for the map, and collected shells ; and at last, after waiting two hours, we reluctantly came to the conclusion that we must go back to the village in the swamp, which we accordingly did. However, we were not so uncomfortable as we had feared, nor did we take any harm from the damp conditions. The head people came to present beef, etc., but I fear I answered them rather curtly, for we saw plainly it was never intended to let us get over the lake until the following day ; but, with the usual native unwillingness to speak out plainly, they would not say so to begin with. In the book which Dr Mullens wrote on his return to England he says of this afternoon's experiences : " I am afraid that the general depression seriously interfered with the reply of our friend, Mr Sibree. The dignity and fulness with which he usually dwelt upon the affairs of the kingdom and the health of the authorities, and the flowery eloquence with which he would describe the purpose of our visit, entirely failed him here. His reply was brief and guarded, and the two-pounder gun he passed over in total silence."

On Wednesday morning we left Ambòhitsàra at half-past six, so as to cross the lake as soon after sunrise as possible, as this is always the calmest time of the day in Madagascar waters. We found about a dozen large canoes waiting for us ; several of these were from thirty to forty feet long,

and three to four feet beam, hollowed out of a single tree. We all embarked and got off soon after half-past seven, but the wind had already risen somewhat, and there was quite a swell on the water. But the sail across was most delightful. As we proceeded, the northern shores opened up, showing two deep bays stretching far away between the hills, and an island, where the Sihànaka made their last stand in resisting Hova domination. From that time it has not been allowed to be inhabited, but is only used for planting vegetables. We had only two paddlers, one at the head, and the other at the stern of the canoe, and so were an hour and ten minutes in crossing. We made an attempt to ascertain the depth of the lake with an old knife as a sinker, and a piece of string as a line, while the doctor, in true scientific fashion, "hove the lead." I regret to say that no accurate information was obtained, for the sounding line was again and again thrown with the report, "no bottom." But our short line was no doubt the reason of our ill-success. The lake is probably deep at its northern end, and it is certainly shallow at its southern extremity, gradually changing into marsh. Some of my missionary friends, who subsequently lived in Antsi-hànaka, have described voyages across the southern end of the Alaotra, where, amongst the dense growth of papyrus, rush, and tall grasses, the only practicable paths for a canoe are dark passages, almost tunnel-like, among the rank vegetation; and where a stranger might easily be lost in the watery and reedy wastes around him.

There can be no doubt that the present lake is but a small remnant of a much larger one; for, at a not very distant period, the water must have covered the whole plain of Antsi-hànaka, thus forming a lake five or six times the size of the present Alaotra. But at a yet earlier period still, this lake extended for a hundred miles farther south, down the Ankay plain, and for at least two hundred miles farther north, forming an immense extent of water, not much unlike the Tànganyika in Central Africa in size and outline, and of considerable depth; for Mr Baron found numerous indications of old shore-lines at elevations of eleven to twelve hundred feet above the present level. Doubtless, the gradual lowering of the valleys of the Mangòro to the south, and of the Màningòry to the north-east, drained off this great lake, leaving only

the present comparatively small sheet of water as its representative.

To an ordinary observer the Alaotra lake presents a good deal of bird life, as well as the large reptiles which bask in the sun on its shores. But to those who will examine more closely and will use a good microscope, there are minute forms of life, both animal and vegetable, which are wonderful for their beauty and their variety. Among the latter are the Algæ, of which my late friend, Mr Baron, made a collection, mostly from the neighbourhood of Alaotra, including a hundred and eighty species, of which seventy proved to be new to science. In a quarto pamphlet of fifty pages, with plates of two hundred different figures, these fresh-water algæ were minutely described, as belonging to thirteen different orders and thirty-one genera.² Many new and interesting species were thus revealed, and considerable additional knowledge of the distribution of known forms attained. Without actual inspection of the plates it is difficult to give any clear notion of the various remarkable, often strange, and frequently beautiful forms of these lowly organised plants as revealed by the microscope. The bi-lobed outlines of the *Cosmaria* are especially noticeable, and hardly less so are the stellate, triangular and multangular forms of other species. It is difficult to believe that some of these remarkable organisms are plants at all; in many cases they are more like some beautiful shell, delicately and elaborately sculptured; while in others they take the form of a simple cell—round, oval or triangular—often as if about to increase by fissure; while others again have curious processes, more like those of some grotesque polyp than anything belonging to the vegetable kingdom. These plants are additional illustrations of the wonders that lie hidden from ordinary observation in the mud of almost every pond and in the slime that gathers round almost every water-plant.

It is a rather interesting fact that the crocodile found in the Alaotra is a different species to that inhabiting all the rivers of Madagascar; but it is identical with the crocodile found fossil, together with the remains of the extinct hippopotamus and the gigantic birds and lemurs which inhabited the island probably until the appearance of man upon the scene. These reptiles are very numerous in the lake, for in the afternoons, on

the small rocky islets which rise only a little above the water, the crocodiles are seen snapping at each other to get space to bask in the sun. In the small streams flowing into Alaotra they are numerous at all times of the day, so that if there are only a few canoes, people dare not cross for fear of being upset. Tortoises are also plentiful on the shores and islets of the lake. Two species of water-lily are found in the water, one being identical with the lotus of the Nile; besides these there are numerous other water-plants, one being a twining plant, called *Tsihitafôtôtra* ("the root not seen"), which twines about other plants in all possible directions, clinging to them by numerous little disks; and there are also two species of convolvulus (*Ipomœa*), with large red flowers. Besides the masses of papyrus (*zozôro*) and *hêrana* sedge, growing in the marshes and shallow parts of the lake, a gigantic and handsome grass, called *Bàraràta*, growing from twelve to fifteen feet high, is very abundant. It would be taken by ordinary people for a species of bamboo, for its size and the thickness of its jointed stem; its sharp prickly leaf sheaths near the root make it very unpleasant for the unshod feet of the natives. In and about the marshes occur the *Jaboàdy*, a species of wild cat, and also a kind of muskrat, both of strong scent.

There are certain mythical creatures firmly believed by the Sihànaka to exist in Lake Alaotra. One of these is a monster having seven heads and known as *Fanànimpitolôha*. It is said to be a sort of serpent, and when it lifts itself out of the water, as it does occasionally, its head touches the sky! There are also *Andriambàviràno* (lit. "water-princesses"). These creatures, though residing beneath the water, never get wet, as they live in water-tight palaces. They are said to have hair reaching down to the waist. Veritable water-nymphs these!

But to return to our journey, we landed at the foot of the hill on which Ambòhitsòa, a village of about eighty houses, is built, and mounted to the top by a steep pathway. Here a most extensive and lovely view presented itself, I think *the* most beautiful of its kind I had ever seen in Madagascar. The lake lay before us, stretching far away to the southward in a great rounded curve, and with its indented bays and island fastness to the northward. The changing shades of purple and blue of the water; the green of the plain beyond; and the

varied outline of hills and mountains in the far background to west and north—all lit up by bright sunshine—made as charming a picture as an artist could desire to transfer to canvas. But we had little time to spare, and so after hastily taking bearings we went to Mârosalâzana, the next village to the south, which we could see on a high hill at three or four miles' distance. On entering the village, a place with about sixty houses, we found a crowd of about four hundred people waiting to receive us. These were not all inhabitants of the place, for many of them had come from Ambôhitsôa to meet us. After a formal reception by the authorities we found the school children assembled on an open raised space in the centre of the village, a group of nearly a hundred altogether, dressed in their best. Many of the girls had a peculiar kind of collar to their dress, consisting of seven or eight massive silver chains of different patterns; they also wore armlets of silver. Many of these children and young people had most intelligent and pleasant faces. We heard them read, and then I was delighted to find they knew the smaller catechism well. I talked to them a little about it, and then addressed a few words to the numbers of people crowded round the children, speaking to them of the great love of God in sending His Son. It was an interesting scene, and one we did not soon forget: the bright intelligent group of children in the centre; the crowd of wondering Sihànaka on each side; the little knots of women in their dark blue dresses and silver ornaments; and the lovely scene around us—all made a picture attractive in its outward aspects, but still more interesting when one thought of these people as seemingly prepared to welcome a fuller teaching than they had yet received.

The pleasant scene at this village, as well as what we had witnessed at others, gave a cheering promise of what might be expected were the people more thoroughly instructed. In a short report supplied by Rabé, the native evangelist, he says that when he first went to Antsihànaka, "only a person could be found here and there who washed their clothes, for everyone's dress was smeared with castor-oil, and they thought it would spoil their clothes to wash them, as they would soon be worn out; so that the clothing of the people was offensive to the last degree. For that reason the dark blue cotton was generally worn, as it was nearly black to begin with. But now there is

hardly anyone who does not wash his clothes, and has not white dress. Not long ago, when it was evening, the young men in the villages used to form into two parties, and had violent boxing-matches all through the village, the women also often joining in the fray. But now no one practises this rough sport. Not long ago rum was what the people chiefly delighted in ; and if any strangers who visited them were not made thoroughly drunk, the owner of the house was looked upon as inhospitable, although he gave them the best of everything to eat."

We left Mârosalâzana at one o'clock, and found outside the village something which gives the explanation of its name, "many poles"—viz. a group of more than twenty poles stuck in the ground close together, and holding ox skulls and horns. This was the largest group we had yet seen, and there also were many more lying mouldering on the ground. Besides these, there were several very high poles with forked tops, such as we had already seen at almost all the Sihànaka villages. These lofty poles are called *jìro*, a word which in Hova Malagasy signifies a "lamp." We had already seen these on our journey northwards, but here was a larger number than we had hitherto met with. These *jìro* are only raised in memory of a *male* Sihànaka ; to eulogise a woman, the rush mats and baskets which she made and possessed while living are arranged on poles by the wayside to meet the public gaze. These people spend a large amount of money and property on the funerals of their relatives. Mr Pearse gives the following account of what was expended at that of a man dying at a village called Màngalâza :—Thirty silk *làmbas*, to wrap up the corpse, value two hundred and sixty-nine dollars ; a hundred oxen, value three hundred dollars ; drink and food, principally the former, thirty-nine dollars' worth ; showing an expenditure of more than six hundred dollars on this particular funeral. (At that time a dollar was worth as much or more to the Malagasy as a pound would be to us.)

After returning home from Antsihànaka, I heard many other particulars about the people and their habits, and among them the following curious, and cruel, custom with regard to widows ; and as this is so utterly different from anything practised by any other Malagasy tribe, as far as I am aware, it is well to put it on record. It is much more like a Hindu custom than a

Malagasy one, and is as follows :—When the corpse of the deceased husband is about to be buried, the widow is decorated profusely with all the ornaments she possesses, wearing a scarlet *làmba*, with beads and silver chains on her neck and wrists and ankles, long ear-rings depending from her ears to her shoulders, and silver ornaments on her head. Then she is placed in the house, so that it may be seen by everyone how her husband adorned her while he was yet living ; and when the people go away to the funeral, she remains still in the house, and does not go to the grave. When the relatives and friends have returned home and seen the widow sitting in her grand clothing and ornaments, they rush upon her, tearing her dress and violently pulling off her ornaments, so as to hurt her, and say at the same time : “ This is the cause of our losing our relative ” ; for they believe that the *vintana*—*i.e.* fate or luck of the wife—is stronger than that of her husband and so has caused his death. Then they give her a coarse *làmba*, a spoon with a broken handle, and a round dish with the stand broken off ; her hair is dishevelled, and she is covered up with a coarse mat ; and under it she remains all day long, and can only leave it at night ; and whoever goes into the house, the widow may not speak to them. She is not allowed to wash her face or her hands, but only the tips of her fingers. She endures all this sometimes for a year, or at least for eight months ; and even then, her time of mourning is not ended, but endures for a considerable time afterwards. And she is not allowed to go home to her own relatives until she has been divorced first by the husband’s family.

The house in which people die is left by the survivors, and no one occupies it again ; they do not pull it down, but let it fall to pieces of itself, but they do not leave the village as do the Sàkalàva in similar circumstances. Such houses are called *tràno fòlaka* (“ broken houses ”) ; but I am informed that this last custom is falling into disuse ; and happily, the influence of Christian teaching has caused the treatment of widows to be greatly altered, so that it is now becoming a thing of the past.

After leaving the “ village of many poles,” our afternoon journey was southward, first crossing several spurs of the higher hills with their intermediate valleys ; and then down a long level tract of country between the lake and a bold wall-like line

of hills, which here forms the eastern boundary of the plain. We passed several large villages, and stopped for the night at a place of forty or fifty houses, called Ambòhimànga.

In one of the villages situated in the dense papyrus thickets which cover the marshes to the south of the lake, a place called Anoròro, lives a strange tribe of people who seem quite isolated, not only in their dwelling-place, but also in their barbarous habits, from the other Sihànaka, and who speak a distinctly different dialect. In the rainy season, when the water rises, it enters into the houses of these people, and they then put together several layers of *zozòro* to form a kind of raft, so that as the water rises, this raft rises with it. Upon these *zozòro* they make their hearths and their beds; and there they live, rising and falling with the water, until the rainy season is over and they can live on the ground again. There are some curious stories about the simplicity of these people and their fathers, for they have no intercourse with anyone outside their village except on a certain day, when they go out to sell the fish they have caught. These people appear to have no fewer than eight unlucky days in each month, so that during more than a quarter of their time their superstition prevents them from going about or engaging in any work.

While speaking of unlucky days, it must be here noticed that all over Antsihànaka, Thursday is considered as *fàdy* (tabooed), and no one will work their rice-fields on that day. To build brick or clay houses is not permitted, death being the supposed penalty in case of transgression. To use hemp also, either in the form of cloth, or for smoking, is also universally tabooed. And besides the *fàdy* common to all Sihànaka, each family or clan has inherited a set of *fàdy* of its own, so that in addition to the universal abstinence from work on Thursday, there will be another day of the week on which nothing may be taken out of the house, the mats may not be swept, etc. Various foods and actions, too numerous to particularise, are *fàdy* to certain villages; while considered quite harmless in some places, they would bring all manner of evil in others.

On Thursday morning we set off again, and after two hours' journey along the east edge of the plain, left it and made a straight course over the rice-fields for Ambàtondrazàka, leaving the great semicircular bay to the east of the town on our left.

We got in at ten o'clock, all very wet with the heavy drizzle, but we were soon comfortably settled in the chapel, and got our things dried in the sun. We were again most kindly received by the officers and the congregation there, but we were obliged to leave soon, so as to get back to Antanànarivo for some important engagements. On consultation with our bearers, we found that they were willing to make a long journey for a day or two (encouraged also thereto by promises of an extra day's pay), so that we might get quickly over the uninhabited country, and reach Anjozòrobé by Saturday afternoon. So we left Ambàondrazàka at midday and arrived at Màngantàny by sunset.

Again were we charmed with the varied scenery of the route, and especially by the grasses, about which I have already spoken in this chapter, and which Dr Mullens graphically describes in a passage which may well conclude this account of our Antsi-hànaka journey. He says :

“ I received the impression, afterwards repeatedly confirmed, that one of the most beautiful things to be found in Madagascar is its grass. It is beautiful in the sheltered valleys, where the tender blades, enriched by the dew and the rain, are refreshing to the eye, and yield like velvet to the foot. But here the grass is in its glory on the great hills. Burnt year after year by long sweeping fires, it springs up again with a profusion which clasps huge rocks within its soft embrace. Here it is short but strong ; there it rises in vast tufts, each of which contains many thousand blades and covers many feet of ground ; and yet again it spreads over vast patches of country in thick, tall masses, which tower above men's heads, open their tinted blades to the warm sun, and wave their myriads of golden feathers in the summer winds. And it is when we contemplate this rich but simple provision of the divine bounty, when we watch these masses of slender blades, each tuft a forest in itself, clothing with beauty what man has neglected, laying up store for man and beast, opening their golden hair to the dews by night and the warm winds by day, and joyously revelling in the life given them from above, that then we can, with Mr Ruskin, appreciate and share the admiration and the praise given by the Psalmist to Him ‘ Who maketh the grass to grow upon the mountains.’ ”²

The following day we had a long journey over “no man’s land,” taking provisions with us and stopping to dine by a stream half-way, and reached Mandànivàtsy before nightfall. Saturday morning we crossed the high ridge in the forest, entering Imèrina again, and got to Anjozòrobé in good time in the afternoon. After the fatigues of the week we had another pleasant Sabbath, the first of the month, with the good people there. Monday evening brought us to Ambòhitrérana, and a couple of hours’ ride on Tuesday morning took us home to Ambòhimànga in time for breakfast ; thus completing in little more than nineteen days our very interesting journey and exploration.

¹ Among the Sàkalàva, *Alaotra* means “ocean” or “sea,” so that it is the sea-like sheet of water. Cf. the use of *Bahr* among the Arabs, in *Bahr-Tabariyeh*, Sea of Tiberias, and *Bahr-Lut*, Sea of Lot—Dead Sea.

² *Trans. Linn. Soc.*, vol. v., pt. 2 (*Botany*, 2nd Ser.).

³ It is a significant fact that the Malagasy word for “glory,” “honour,” is *vòninàhitra*, which, literally translated, is “flower of the grass.” Did this expression arise from the native admiration of some of these beautiful grasses, similar to that which so excited Dr Mullens’ delight when travelling in this country.

CHAPTER XVI

LAKE ITÀSY

MADAGASCAR is not at present one of those regions of the earth where volcanic disturbances occur; but there is ample evidence, from the numerous extinct craters found in various parts of the island, that at a very recent period, geologically considered—possibly even within the occupation of the country by its present inhabitants—it was the theatre of very extensive outbursts of subterranean energy. The whole island has not yet been examined with sufficient minuteness to determine the exact extent of these old volcanoes, but they have been observed from near the south-east coast in South Latitude 23° , and in various parts of the centre of the island up to the north-west and extreme north, a distance of six hundred and eighty miles; and probably a more complete survey would reveal other links connecting more closely what is, as at present known, only a series of isolated groups of extinct craters. In the central provinces of Madagascar there are two large clusters of old volcanic cones and vents: one of them in about the same latitude as the capital (19° South), but from fifty to seventy miles away to the west of it, in the neighbourhood of Lake Itàsy; the other in the district called Vâkinankàratra, situated about eighty miles to the south-south-west of Antanànarivo, and south-west of the great central mountain mass of Ankàratra.

This second volcanic region stretches from twenty to thirty miles from Antsirabé away west to Bétafo and beyond it, and contains numerous and prominent extinct craters, some of which have been described by the graphic pen of the late Dr Mullens in his "Twelve Months in Madagascar" (pp. 214-219). The doctor says that he counted in this southern group about sixty cones and craters.

The Itàsy just referred to is a lake situated about fifty-five

miles west of Antanànarivo, and is about five miles long from east to west, and three miles from north to south. It is irregularly square in outline, several small headlands breaking up its shores into little bays; while to the north, where the river Lilià takes its overflow to the sea, is a long extension or arm of the lake, curving round a mountain, which proves to be an old volcano. Seen from the east, as I approached it from the capital, it appeared as if in a depression of the general surface, and its waters were of a lovely blue. A still finer view of it is obtained from a mountain called Ambòhimiangàra, which is about three miles distant from it to the north-east. This is by far the highest point for a long distance around the lake; and as we proceeded towards it during our two days' journey from Antanànarivo, its great rounded mass gradually rose and dominated the whole landscape.

A late friend of mine, who resided long in the district, wrote of Ambòhimiangàra as "a kingly hill, higher by head and shoulders than any other near it, its crown of white stones rising some eighteen hundred feet above the lake lying blue at its feet. The view from the summit was magnificent, the centre of the whole being the lovely Itàsy embosomed in its bright green hills, a pearl encircled with emeralds, with mountains upon mountains in every direction as far as eye could reach. Fierce thunderstorms were being marshalled hither and thither, and could be counted by the half-dozen wherever the eye turned. The whole mountain is a mass of quartz; where the rocks protrude it is toned down to silver-grey by lichens, but where the rain has washed it away, it appears as coarse sand and pebbles of the purest white, with an occasional speck of pink. . . . We had a good ride, after our descent, along the north-western arm of the lake. This end of Itàsy, forming, as it were, a little lake by itself, and reflecting the deep blue and white of the sky above it, lay calm in the bright sunshine, encircled by the green hills, while clusters of houses, embowered in peach and other trees, grouped themselves around its shores. Here and there a canoe's dark line among the sedges showed where the fisher was at work with hook and line; and across the meadow to the right, a herd of cattle was slowly wending its way to fresh pastures. Altogether, it formed a most inviting subject for a picture."

Some way down the river flowing from the north-western arm of the lake is a very beautiful waterfall. The river, broken into three streams, falls in foaming white masses over a ledge of black lava, some fifty feet deep. The whole bed of the river for a mile above is of the same black character, the lava broken into innumerable blocks and setting off the vivid colour of the verdure on the river banks. The people say that Itàsy was once only a huge swamp, and its becoming a clear lake is within the memory, or perhaps the traditions, of the inhabitants. Other legends relate that the lake was formed by a Vazimba chieftain, named Rapèto, damming up the river flowing from the swamp; and so the rice-fields of a neighbouring chief, with whom he was at variance, were flooded and have ever since remained under water. There is doubtless an element of truth in this latter account; but the chieftain, also supposed to be a giant, was not a human being, but a volcano, which broke out at the north-western corner and dammed up the river for a long period, as shown by the lava in its bed, as just described. The river has now cut its way several feet through the barrier which was thus thrown across its course.

I spent several hours one day in a canoe on the lake with a friend, shooting wild duck (my first and my last exploit in this line). We found birds very abundant on the water, and in the swamps and rank vegetation along the shores. Flamingoes, with their white plumage and pink tinge pervading the whole under part of the wings, are fairly common here, and are said to be extremely good eating. The native name for this bird, *Sàmaka*, is appropriate and descriptive, as it means "disjointed," "split," referring to its immensely long legs. It is also called *Amjòmbona*, from its trumpeting cry, this being also the native name for a large species of triton shell used as a trumpet. An adult male bird stands more than four feet high; and when on the defensive these birds make quite a loud noise by sharply opening and closing their beaks, which are long and powerful. When on the wing, they fly exceedingly high.

Among the many birds frequenting this lake and the neighbourhood are the purple water-hens, of which three species are found in Madagascar. They are of a rich bluish-purple colour, and have a very powerful beak, with which they easily root up the *Hèrana* sedge, when growing on the edge of the lake in

shallow water. They do this for the sake of the tender rootlets, and perhaps also for insects. Of the jacanas, two species are found here ; with their extremely long toes they walk easily upon the large leaves of aquatic plants, seeking for the water-insects which form their food. They dive with great ease and are therefore very difficult to shoot. Six or seven species of rail have been observed in the island ; the most common one (*Rallus gularis*) is regarded with great respect, as it is believed to bring rain in dry weather. Its loud whistling and tremulous cry is heard chiefly towards evening. These birds are said to be so careful of their eggs and young that they may easily be taken by the hand from the nest. M. Pollen says : " I once saw a hen-bird who would not quit the space near her nest, but kept walking around it, ruffling her feathers, and dragging her wings on the ground, in the same way as our domestic hen does when defending her young. Other birds common to the marshy districts are crested coots, curlews, snipe and plovers. Two species of birds peculiar to Madagascar, for whom a special family had to be formed, can only be spoken of by their scientific name of *Mesites* ; " they are very curious and specialised birds, taking their place between the rails and the herons." According to the native accounts, when the nests of these mesites, which are mostly placed on a low situation, are flooded, the parent birds drag them to where they will be free from injury by the water. If anyone takes their young, they follow them into the village ; and on account of this love for their offspring they are considered sacred (*fàdy*), because, say the natives, they are in this like human beings.

Not very far to the east of the second group of old volcanoes mentioned above is the large village of Antsirabé (" much salt "), which is about seventy-five miles south-west of Antanànarivo, and is now on the automobile road to the Bétsiléo province. At this place one of the chief springs is largely charged with lime, which has formed an extensive deposit all over a small level valley sunk some twenty feet below the general level of the plain around the village. For a long time this place furnished almost all the lime used for building in the capital and in the central province of Imèrina. Besides the deposit over the floor of the valley, there was also a compact ridge-shaped mass of lime accretion, seventy feet long by

eighteen to twenty feet wide, and about fifteen or sixteen feet high. This had all been deposited by the spring, which kept open a passage through the lime to the top. Some years ago, however, the spring was tapped by a shaft, of no great depth, a few yards to the north, over which a large and commodious bath-house was erected by the Norwegian Lutheran Mission; and here many visitors came to bathe in the hot mineral water, which has been found very beneficial in rheumatic and other complaints.¹ A little distance to the south-west is another spring, not, however, hot, but only milk-warm, the water of which is drunk by those who bathe in the other spring. This water has been shown to be, in chemical constituents, almost identical with the famous Vichy water of France. All over the valley the water oozes up in various places; and about half-a-mile farther north are several other springs, somewhat hotter than that just described, to which the natives largely resort for curative bathing.

During the excavations for the foundations of the bath-house, the skeletons of several examples of an extinct species of hippopotamus were discovered, the crania and tusks being in very perfect preservation. Some of these are now in the museum at Berlin; the finest specimen was sent to the museum of the University of Christiania in Norway. This Madagascar hippopotamus was a smaller species than that now living in Africa, and is probably nearly allied to, if not identical with, another hippopotamus (*H. Lemerlei*), of which remains were found in 1868 by M. Grandidier, in the plains of the south-west coast. I was informed by the people that, wherever in these valleys the black mud is dug into for a depth of three or four feet, bones are sure to be met with. From the internal structure of the teeth and bones of the hippopotami discovered at Antsirabé, traces of the gelatine being still visible, it is evident that the animals had been living at a comparatively recent period. There have been occasional vague reports of the existence of some large animal in the southern parts of the island; and perhaps the half-mythical stories of the *Sòngòmby*, *Tòkandia*, *Làlomèna*, and other strange creatures current among the Malagasy, are traditions of the period when these pachyderms were still to be seen in the lakes and streams and marshes of Madagascar.

Besides the remains of hippopotami, Mr Rosaas, for many years a missionary of the Norwegian Society, and stationed at Antsirabé, obtained considerable quantities of the bones of extinct gigantic birds. It is about eighty years ago (*circa* 1834 and 1835) since it became known to naturalists, through the discovery of portions of massive leg-bones and fragments of enormous eggs, that there was evidence of the former existence in Madagascar of large birds. For a quarter-century after that date, the dislike of the heathen queen to all foreign influence prevented fuller investigations of a scientific character. But since the year 1861 further researches, and excavations made in widely separated localities, have shown that several species of these great birds existed until a comparatively recent period in many parts of the island. It was evident that they were flightless, and were allied to the ostrich, and still more closely to the recently extinct *Dinornis* of New Zealand. The generic name of *Æpyornis* was given to these birds, of which several species were discovered, ranging in size from that of a bustard to a bird exceeding an ostrich in height and also in the massive character of the skeleton. The largest species was accordingly named *Æpyornis maximus*. Subsequently, the remains of still larger birds were discovered and these were called *Æ. titan* and *Æ. ingens*, the largest of them being about ten feet in height. More recent and exact examination has shown that the *twelve* species which had been formed must be reduced to a smaller number, as some of the lesser kinds have been proved to be young and immature forms of the larger species. From the collection of hundreds of bones, and, in a very few cases, complete skeletons, it is now clear that several species of these great birds once roamed over the marshes and valleys of Madagascar, as the ostrich does still in Africa, and the cassowary in Australia and some East Indian islands.

The egg of one of the species, probably of the largest one, is the largest of all known eggs, its longer axis being twelve and a quarter inches, and the shorter one nine and three-eighths inches; it thus had a capacity equal to six ostrich eggs, and to one hundred and forty-eight of those of the domestic fowl.² From the marks of cutting with a sharp instrument seen on some of the bones, it seems highly probable that these great birds, as well as the hippopotamus, gigantic tortoises, and other

animals, were living when the first human inhabitants of the island appeared upon the scene ; and doubtless this was also the reason of the disappearance of both birds and beasts, as they were hunted and used for food.

¹ Since the French occupation this bath-house has been removed, and the mass of lime accretion has been broken up for use.

² The following appeared in *Punch*, 22nd July 1893 :—

“*Good Egg-sample!*—One egg was sold the other day for £160, 18s., *vide Times* of Wednesday last. The egg was a perfect specimen of that *rara avis in terris*, the gigantic *Æpyornis maximus* of Madagascar. What did Mr Stevens do with it? Did he have it made into several omelettes for a breakfast party of a dozen? Of course it was a perfectly fresh egg, and the only thing at all high about it was the price.”

CHAPTER XVII

VOLCANIC DISTRICT

WITHIN a few miles of Antsirabé are two crater lakes. The nearer and larger of these is called Andraikiba, which lies distant about four miles due west. This is a beautiful sheet of water, blue as the heavens in colour, in shape an irregular square, but curving round to the north-west, where it shallows into a marsh, which is finally absorbed in rice-fields. The lake is said to be of profound depth, but the hills surrounding it are not very lofty, rising only about two hundred feet above the surface of the water, from which they ascend steeply. Fish and water-fowl, and crocodiles also, are very abundant in and on its waters.

But the most interesting natural curiosity to be seen in the neighbourhood of Antsirabé is the crater-lake of Trîtrîva. This is situated about ten miles to the south-west, a pleasant ride of two hours by palanquin. Travelling at first in a westerly direction, the road then turns more to the south-west, and skirts the southern foot of the old volcano of Vòhitra. Passing about a mile or two south of the high ground round the southern shores of the Andraikiba lake, the road gradually ascends to a higher level of country, so that in about an hour and a half's time we are nearly as high as the top of Vòhitra—probably about five hundred feet. Reaching a ridge between two prominent hills, we catch our first sight of Trîtrîva, now from two to three miles distant in front of us. From this point it shows very distinctly as an oval-shaped hill, its longest axis lying north and south, and with a great depression in its centre, the north-eastern edge of the crater wall being the lowest part of it, from which point it rises gradually southwards and westwards, the western edge being at the centre from two to three times the height of the eastern side. To the north are two much smaller cup-like hills, looking as if the volcanic forces, after the main crater had been formed, had become weaker and so

been unable to discharge any longer by the old vent, and had therefore formed two newer outlets at a lower level.

Descending a little from the ridge just mentioned, we cross a valley with a good many scattered hamlets, and in less than half-an-hour reach the foot of the hill. A few minutes' pull up a tolerably easy slope, perhaps two hundred feet in height, brings up to the top, at the lowest part of the crater edge ; and on reaching the ridge the crater of the old volcano and its lake is before us, or, rather, below us. It is certainly an extraordinary scene. The inner sides of the crater dip down very steeply on all sides to a deep gulf, and here, sharply defined by perpendicular cliffs all round it, except just at the southern point, is a rather weird-looking dark green lake far below us, the water surface being probably from two hundred to three hundred feet lower than the point we are standing upon, and consequently below the level of the surrounding country. The lake, exactly shut in by the cliffs of the crater surrounding it, is not blue in colour, like Andraikiba, although under a bright and cloudless sky, but a deep and somewhat blackish-green. It must look, one would suppose, like ink under a stormy sky or in the shadows of evening.

We sit down to rest and try to take in all the details of this novel picture. It is undoubtedly an old volcano we are now looking down into ; the spot on which we rest is only a few feet in breadth, and we can see that this narrow knife-edge is the same all round the crater. Outside of it the slope is pretty easy, but inside it descends steeply, here and there precipitously, to the edge of the cliffs which so sharply define the actual vent and, as distinctly, the lake which they enclose. Looking southwards, the crater-edge gradually ascends, winding round the southern side, and still ascending as the eye follows it to the western, the opposite side, where the crater wall towers steeply up from two hundred to three hundred feet higher than it does on the east, where we are standing. The lake we judge to be about eight hundred to nine hundred feet long and two hundred to two hundred and fifty feet wide, forming a long oval, with pointed ends. The cliffs which enclose it appear to be from forty to fifty feet in height, whitish in colour, but with black streaks, where the rain, charged with carbonic acid, has poured more plentifully down their faces. These cliffs are vertical and

in some places overhang the water, and from their apparently horizontal stratification are no doubt of gneiss rock. In coming up the hill I noticed a few small lumps of gneiss among the basaltic lava pebbles. The strongest feature of Tritriva is the sharply defined vertical opening of the vent, looking as if the rocks had been cut *clean through* with an enormous chisel, and as if they must dip down—as is the case—to profound depths below the dusky green waters. At the northern end of the lake is a deep gorge or cleft, partly filled with bushes and other vegetation. Southward of this, on the eastern side, the cliffs are still lofty and overhang the water, but at about a third of the lake's length they gradually decrease in height, and at the southern point they dip down to the level of the lake, so that at that part only can the water be approached. On the western side the cliffs keep a pretty uniform height all along the whole length.

So steep is the inward slope of the crater walls that we all experienced a somewhat "eerie" feeling in walking along the footpath at its edge; for at a very few feet from this a false step would set one rolling downwards, with nothing to break the descent to the edge of the cliffs, and then to the dark waters below. Yet there was a strange fascination in the scene, and the variety and contrast and depth of the colours would make the Tritriva lake and slopes a striking subject for a painting from many different points along its crater wall. When we arrived, the sun, yet wanting an hour and a half of noon, was still lighting up the grey-white stone of the western cliffs, but the shadows were every minute growing more intense as the sun became more nearly vertical. Far below us was the deep green oval lake; above it, the stratified gneiss cliffs with their black streaks, diversified here and there by patches of bright green bush. Then again from their edges sweep steeply upwards the grey-green sides of the crater, culminating in the lofty western ridge opposite to us. And over all was the blue sky flecked with cirrus clouds; altogether a scene such as I have seen nowhere else in Madagascar, or indeed in any other country.

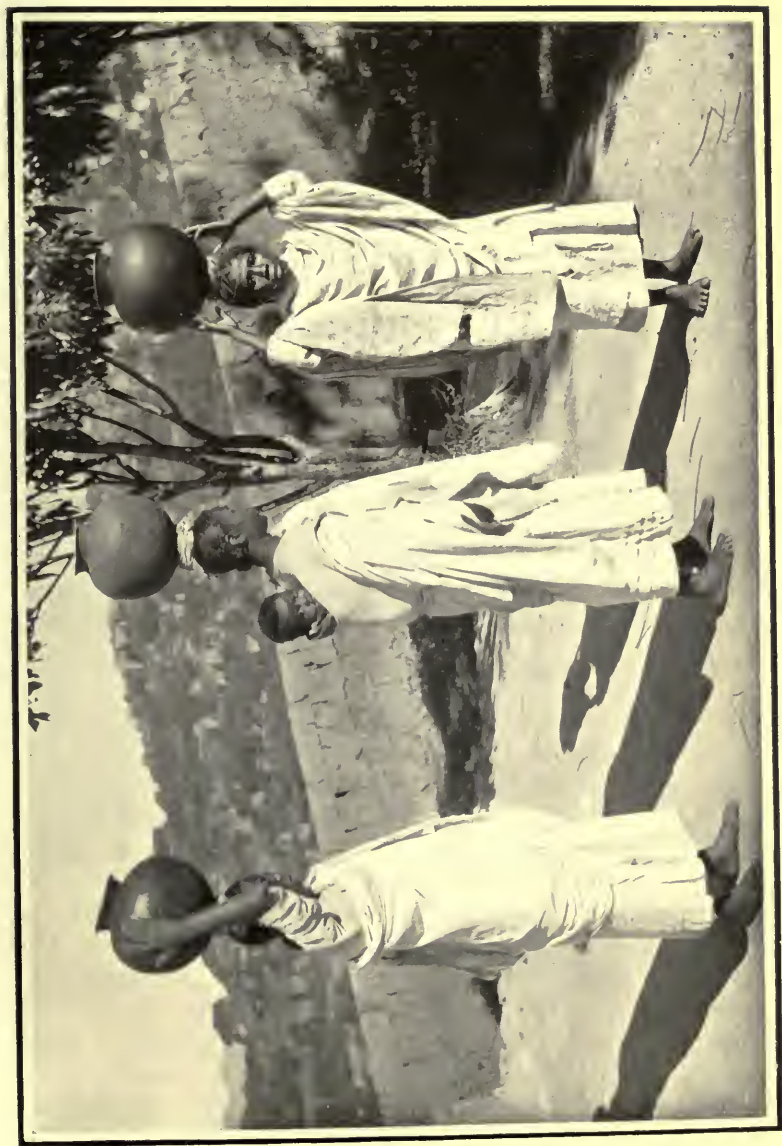
After fixing in our minds the view from the north-east, we proceeded southwards along the crater edge to the higher part at the south-east, where the view is equally striking, and the

depth of the great chasm seems still more profound. Here we waited some time, while most of our men went down to one of the hamlets in the plain to the east to get their meal, in which quest, however, they had only poor success. On expressing a wish to taste the Tritriva water, one of our bearers took a glass, and descending by a breakneck path, went to fetch some water from the lake. He was so long away that we were beginning to feel uneasy, but after a quarter of an hour he reappeared with the water, which tasted perfectly sweet and good. He also entertained us with some of the legends which were certain to have grown up about so weird-looking a place as Tritriva. Pointing to two or three small trees or bushes growing on the face of the cliffs near the northern point of the lake, he told us these were really a young lad and lass who had become attached to each other; but the hard-hearted parents of the girl disapproving of the match, the youth took his loin-cloth, and binding it round his sweetheart and his own body, precipitated her with himself into the dark waters. They became, so it is said, two trees growing side by side, and they now have offspring, for a young tree is growing near them; and in proof of the truth of this story, he said that if you pinch or break the branches of these trees, it is not sap which exudes, but blood. He appeared to believe firmly in the truth of this story.

He also told us that the people of a clan called Zànatsàra, who live in the neighbourhood, claim some special rights in the Tritriva lake; and when any one of their number is ill they send to see if the usually clear dark green of the water is becoming brown and turbid. If this is the case they believe it to be a presage of death to the sick person.

Another legend makes the lake the former home of one of the mythical monsters of Malagasy folk-lore, the *Fanànim-pìto-lôha* or "seven-headed serpent." But for some reason or other he grew tired of his residence, and shifted his quarters to the more spacious and brighter lodgings for seven-headed creatures afforded by the other volcanic lake of Andràikiba.

This same bearer assured us that in the rainy season—contrary to what one would have supposed—the water of the lake diminishes, but increases again in the dry season. He told us that there is an outlet to the water, which forms a spring to the



WATER-CARRIERS

The woman with a baby on her back has a full pitcher simply balanced on her head

north of the mountain. I noticed a white line a foot or two above the surface of the water all round the foot of the cliffs, showing a probably higher level than at the time of our visit. It was popularly supposed to be unfathomable, but some years after my visit the Rev. Johannes Johnson, of the Norwegian Mission, sounded the lake in three places. The deepest portion was found to be at the northern end, where it proved to be four hundred and seventy-four feet in depth.

Walking round to the southern end of the crater edge, the lake, here foreshortened, has a somewhat close resemblance in outline to that of the lake of Galilee, as seen on maps; but I must confess that the first sight of it in its deep chasm made me think much more of the other lake of Palestine, the Dead Sea, in its profound gorge between the Judean hills and the highlands of Moab. After making a slight pencil sketch or two, I proceeded up the far higher saddle-back ridge on the western side. Here the lake seems much diminished in size and lying far down at an awful depth. But a magnificent and extensive view is gained of the surrounding country: the long flat-topped lines of hill to the east running many miles north and south, and surmounted directly east by the two perfect cones of old volcanoes; the peaked and jagged range of Vòlom-bòrona to the south-east; the enormous mass of Ibity to the south, and then west, a flat region broken by abrupt hills. To the north-west are the thickly populated valleys towards Bétafo, with many a cup-shaped hill and mountain marking old volcanic vents; and beyond this a high mass of country with serrated outline against the sky, showing the district of Vávavàto; and finally, coming to due north, is the varied grouping of the hills, which form the southern termination of the central mountain mass of Ankàratra. Between us and these again is the extensive plain of Antsirabé, with the white walls and gables of the church and the mission buildings plainly visible in the bright sunhsine, although ten or twelve miles distant—altogether, a panorama long to be remembered. From this point also the significance and appropriateness of the name given to the old volcano is clearly seen; for *Tritriva* is apparently a combination of the words *trìtry*, a word used to describe the ridge on the back of a chameleon or a fish, and *iva*, low, deep; so that the name very happily describes the

long steep western ridge or crater wall, and the deep chasm sweeping down from it.

It may just be said further, that the slopes of the crater both inside and out are covered with turf, which grows on a dark brown volcanic soil, mingled with rounded pebbles of greenish or purple lava, very compact and close in structure, and containing minute crystals scattered sparingly through it. Occasional blocks of this are found round the edge of the crater wall, and the same rock crops out at many places on the steep inner slopes. I did not notice any vesicular lava or scoria; and at a little homestead not far from the north-eastern foot of Tritriva, I was surprised to find the *hady* or fosse dug to twelve or fourteen feet deep almost entirely through the red clay or earth found all through the central regions of the island. The dark brown volcanic soil, here seen in section, appeared to be only eighteen inches deep, with layers of small pebbles. So that the discharge of the volcanic dust and ash appears to have extended only a short distance from the mountain; at least it does not appear to have been very deep, unless, indeed, there has been much denudation. It must be remembered, however, that this point is to the windward side of the hill; probably the volcanic soil is deeper to the west of it. The much greater height of the western wall of the crater is no doubt due to the prevailing easterly winds carrying the bulk of the ejected matter to the west, and piling it up to two or three times the height of the eastern side. After seeing the amount of gneiss rock which must have been blown out of the vent, I expected to have found much greater quantities of it, and in larger blocks, than the very few and small fragments actually seen on the outer slopes. The greater portion, however, is probably covered up under the quantities of volcanic dust and *lapilli* which were subsequently ejected.

Tritriva, it will be evident from this slight sketch, will greatly interest those who have a taste for geology and physical geography; while its peculiar and somewhat awe-striking beauty makes it equally worthy of a visit from the artist and the lover of the picturesque. Certainly it became photographed upon our memory with a distinctness which rendered it a vivid mental picture for many a day afterwards.

Returning northward from Antsirabé towards the neigh-

bourhood of Itàsy, we have to pass to the westward of the great *massif* of Ankàratra ; and the summits of this mountain mass being the highest points in the centre of the island, a short space must be devoted to a brief description of it. From the capital, Ankàratra is the most prominent object in the landscape to the south-west, rising by easy gradients to about twice the elevation of the general level of Imèrina, and three or four points showing distinctly against the sky, although they are from forty to forty-five miles distant. The highest point is called Tsiàfajàvona ("that which the mists cannot climb"), and is eighty-six hundred and thirty-five feet above sea-level. There is no doubt that the whole mountain is an ancient volcano, for the rock which has been poured out as lava from it is a black olivine basalt. One peak, to the east, consists of mica-trachyte ; and at its northern foot there is an exposure of augite-andesite rock. "Seen from Antanànarivo, the mountain of Ankàratra seems to be one almost uniform mass, but when actually there, it resolves itself into deep ravines, enormous spurs, conspicuous peaks, and isolated or continuous mountain masses. The spurs, which run out like so many fingers in all directions, and to great lengths from the main body of the mountain, do not represent so many lava flows, but have been formed by the numerous streams which have excavated the deep and wide valleys between them."

The amount of lava that has issued from Ankàratra, says Mr Baron, is truly astounding, reaching in places to a depth of twelve hundred to fourteen hundred feet, and occasionally to as much as two thousand feet. Occasionally the basalt assumes a columnar form ; but everywhere the surface of the lava is decomposed into soil. This, and the apparent absence of all craters on and around the mountain, seems to point to a long period having elapsed since the volcano was active, probably several centuries. When on the highest point of the mountain, there appear to be two ranges of summits ; which lie in the form of a cross, the intersection being marked by a small cone. On the south-western slopes are considerable remains of forest, which probably in former times covered a large proportion of the present bare highland of the interior of Madagascar. It is by no means easy to get natives to go with one

to these lofty points. They are afraid of the vengeance of the spirits of the mountains, who will punish all who dare invade their territories.

In one of the valleys to the west of the *Ankàratra massif* there is a river called *Antsèsika*, which is quite lost to sight and sound for about a mile and a quarter. It disappears under a mass of enormous gneiss boulders, which have filled up the valley of the river, so that the stream runs for a considerable distance at an immense depth below the general level. In the upper part of its course, this river passes over a series of grand falls before diving deep into the earth, as just described. Its name of *Antsèsika* is very appropriate, as it means "that which is thrust in."

Some members of the extinct fauna of Madagascar (*Æpyornis*, hippopotamus and crocodile) have been already noticed, but we must here mention other discoveries made within the last few years. About twenty years ago a skull, in a sub-fossil condition, was discovered on the south-west of the island, and proved to be that of a gigantic form of lemuroid animal. This skull is very much larger and longer than those of any existing lemurs (which are fairly globular in shape), and belonged to a creature more like a gorilla in size and strength. More recently, at a place called *Ampàsambazimba*, which is five miles north of *Itàsy*, the remains of a number of species (fourteen or fifteen) of extinct lemuroid animals have been discovered; in fact this spot seems like the burial-ground of a whole fauna now entirely passed away, and probably quite recently; for Dr Standing, who conducted the excavations, thinks that not more than five centuries have elapsed since some at least of these animals were living. Several new species of apparently quite distinct genera have been disinterred; they are mostly larger than any existing lemuroid; and some of them form links between the true monkeys and the lemurs—families of primates now very distinct from each other. Some of these newly discovered creatures seem, from the position of the nostrils, eyes and ears (like those of the hippopotamus), to have been adapted to a partially aquatic life. There is abundant evidence of the former existence of extensive lakes in the surrounding country, where now there is only marsh or dry land. Others of these extinct animals were arboreal; and from the

remains of leaves and branches, together with bones, not to mention other evidence, there is no doubt that much of what is now open down and bare hill was formerly covered with forest. There was therefore appropriate habitat for them all; and their needs, whether in water or on the trees, would be met by the former conditions of the country. It seems highly probable that the physical changes of the interior have been the chief cause of the extinction of so many living creatures, although the advent of man upon the scene may have hastened the process.¹

As this chapter necessarily touches less on popular and more on scientific matters than the rest of this book, a few more words may be added on the palæontology and geology of Madagascar. Besides those extinct creatures already spoken of, remains of gigantic tortoises have been discovered; also species of swine and river-hog; an ox differing from the existing cattle of the country, and a large rail and a goose exceeding in size any living species. All these belonged to the Quaternary and Recent geological epochs. But far back in the period of the Secondary rocks a species of sloth lived in the forests, old forms of crocodile lived in the rivers; and there were three at least of those gigantic lizards which were the largest of all known land animals, and were the master existences of the Jurassic period.

To sum up in a sentence or two the salient features of Madagascar geology, it may be said that the whole eastern part of the island from north to south, comprising probably about three-fifths of the entire area, is composed of crystalline rocks—gneiss, granite, mica-schist, etc. But the western two-fifths of its surface consists chiefly of Secondary strata, including chalk and sandstones and limestones of the Jurassic and Cretaceous, periods, as well as a smaller area of rocks of the Eocene and Oligocene eras. A fringe of Quaternary deposits is also found along a great part of the west coast. It is evident, therefore, that the western side of the island has been repeatedly under the sea during the geological periods just mentioned, leaving the upper highland of ancient rocks as an island not half the extent of the present Madagascar. It has quite recently been found that a narrow edging of chalk rock extends for about one hundred and twenty miles on the central part of the east coast.²

Plutonic rocks are found in several places in both the great geological divisions of the island, and also many outflows of volcanic rocks, of a much more recent date.

We have already spoken of the two principal groups of extinct craters which exist in the central portion of Madagascar. In the more southerly of these groups, Dr Mullens speaks of an ascent of Ivòko, one of the finest old volcanoes, which is eleven hundred and thirty feet high. This, he says, "was a vast crater, a quarter of a mile across; the encircling wall was complete except at the south, where the opening was fifty feet wide. Beneath us, half-a-mile to the east, was another crater, Iatsifitra, second only to Ivòko, with its opening to the north. On the north-west shoulder of Ivòko were two other large craters, overhanging the village of Bétàfo, two more were close by to the north-east, and others were conspicuous ten miles to the north. On the south again were several others, the horseshoe shape being very marked in them all. Descending to the crater of Iatsifitra, we observed that the lava rocks which had issued from it were black, sharp and fresh, as if they had been broken yesterday. On the plain I counted thirty greater piles of lava, like ruined fortresses, and numberless smaller ones. It was clear that like the Phlegræan fields in Italy, the entire plain had at some time been on fire; and that a hundred jets of flame and molten lava had spurted from its surface, hurling their blazing rockets into the sky. Altogether, in our journey to the west and south-west of the capital, we counted a hundred extinct craters, extending over an arc of ninety miles."

Madagascar appears, therefore, to be the extinct central portion of a volcanic belt which extends from Great Comoro to the north-west, through the other islands of the group, Nòsibé and northern and central Madagascar, to Réunion to the east, a distance of thirteen hundred and sixty miles. And it is noteworthy that at each extremity of this belt there is a still active volcano—viz. Piton de Fournaise, in Réunion, and one eighty-five hundred feet high in Great Comoro.

As a country showing numerous traces of volcanic disturbance, Madagascar is almost every year visited by shocks of earthquake. Happily these are not of a severe character, and little damage is usually done; although often a strange

subterranean roar accompanies them and a tremor of several seconds' duration. The Malagasy still remember a rather severe earthquake which happened many years ago and detached a large mass of rock from the cliffs on the precipitous west side of the ridge on which Antanànarivo is built. In September 1879 a severe shock, felt most in the Vònizòngo district, was experienced, and lasted for at least thirty seconds; this was accompanied by a loud rumbling sound, as of violent thunder, and in places the ground was split up by the shaking. In the year 1897, again, slight shocks were very numerous, and on some days and nights the earth appeared to have been in a constant state of tremor. These earth movements were felt more especially in the region of old volcanic disturbance about Lake Itàsy, where hundreds of slight shocks were experienced during seven or eight months. On the night of 2nd November four or five sharp movements occurred, one of which was more violent than anything remembered by the Malagasy, and wakened the whole population of the capital and around it in alarm. Chimney-stacks were thrown down, walls were cracked and ceilings damaged. This earthquake appears to have been felt over a very wide extent of country, from Tamatave and the east coast to Mèvatanàna away north-west, and as far as the Bètsiléó province in the south. It had the effect of stopping temporarily the mineral spring at Antsirabé, which is so exactly like Vichy water; although, curiously enough, the hot-water springs, within a few yards of the other, were not affected. In the Ifànja marsh, a few miles from Itàsy, a small mud geyser is said to have appeared.

I will conclude this chapter, in which much has been said of extinct forms of existence, by a glimpse at the ancient animal life of the island. Let us try to sum up these in a few sentences.

It seems probable that Madagascar, when the first representatives of mankind occupied it, was a country much more fully covered by lakes and marshes, and also by forest, than it is at present. In these waters, amid vast cane-brakes and swamps of papyrus and sedge, wallowed and snorted herds of hippopotami; huge tortoises crawled over the low lands on their margins; tall ostrich-like birds, some over ten feet high, and others no larger than bustards, stalked over the marshy valleys; great

rails hooted and croaked among the reeds, and clouds of large geese and other water-fowl flew screaming over the lakes; on the sandbanks crocodiles lay by scores basking in the sun; great ape-like lemurs climbed the trees and caught the birds; troops of river-hogs swam the streams and dug up roots among the woods; and herds of slender-legged zebu-oxen grazed on the open downs. These were the animals which the first wild men hunted with their palm-bark spears, and shot with their arrows tipped with burnt clay or stone.³

And as we look further back through long past geological ages, when the clays and sandstones of the oolite, and the white masses of the chalk were being deposited in the coral-studded tropic seas and archipelagoes of Europe and other parts of the world, and when Madagascar was probably no island, but a peninsula of Eastern Africa, the mist opens for a moment, and we see vast reptile forms dimly through the haze; great slender-snouted gavials in the streams and lakes, sloths moving slowly along the branches of the trees, and huge dinosaurs, sixty to eighty feet long, crawling over the wooded plains, and tearing down whole trees with their powerful arms.

Such are some glimpses of the Madagascar of the past which the study of its rocks and fossils already opens to the mental eye. We may confidently look for further light upon the dim and distant bygone ages as we learn more of the geology of the country. The thick curtain which at present shrouds the old-world times will be yet more fully lifted, and we shall probably, ere many more years have passed, be able to draw many more mental pictures of the extinct animal life of the great African island.

¹ See "Recherches sur les Lémuriens disparus et en particulier sur ceux qui vivaient à Madagascar." Par G. Grandidier. *Nouv. Arch. du Muséum*, 4e série, tome vii., 144 pp. 1905. Also "On Recently Discovered Subfossil Primates from Madagascar." By Herbert F. Standing, D.Sc. *Trans. Zool. Soc.*, vol. xviii., pt. ii., pp. 59-217. May 1908.

These extinct lemuroids have been classed in the following genera:—*Megaladapis* (3 sp.), *Lemur* (2 sp.), *Palæopropithecus* (4 sp.), *Archæolemur* (2 sp.), *Poradylemur* (1 sp.), *Hadropithecus* (1 sp.), *Mesopropithecus* (1 sp.), and *Archæoindris* (1 sp.).

² No rocks of the Primary formations have been discovered in Madagascar, nor does it seem probable that any exist.

³ The Vazimba, the supposed earliest inhabitants of the interior, are said to have not known the use of iron, but to have had spears made of the hard, wiry bark of the Anivona palm, and to have employed arrow-heads made of burnt clay. No flint weapons have yet been discovered in Madagascar.

CHAPTER XVIII

SOUTHWARDS TO BÉTSILÉO AND THE SOUTH-EAST COAST

A FEW years ago I was invited by the Friends' Foreign Missionary Association to accompany one of their missionaries, Mr Louis Street, on a journey to some of the southern portions of Madagascar. The object of this journey was twofold: firstly, to visit the scattered Christian congregations connected with the London Missionary Society, and to preach to and teach the people; and secondly, to gain some more accurate information as to the geography and physical features of the south-eastern provinces, and the dialects and customs of the different tribes inhabiting those parts of the great island. At that period (in the seventies) Madagascar was still unmapped and only very partially explored. A very large proportion of the country was still a *terra incognita*; so that missionary journeys away from the neighbourhood of the capital had all the charm of novelty and exploration. Its physical geography, its geology, and its botany and natural history were all practically unknown; so I looked forward with intense interest to seeing new provinces and new people; nor was I disappointed in this expectation.

Like all journeys in Madagascar until about twelve years ago, this one was made by the native conveyance, the *filanjàna* or light palanquin (see Chapters II. and III.), and also, as will be seen, by frequent voyages in canoes. And although *filanjàna* travelling, like all sublunary things, had its drawbacks, I always enjoyed that mode of getting over the ground. But in setting off on a journey which was to last for several weeks, it was not always easy to get started. You might engage your men for two or three weeks beforehand; you might advance money to keep a hold on them; you might even induce them to deposit a small sum with you as security; but one was never quite sure that every man had arrived, and was going along with you, until one had got clear away at least half-a-

day's journey. All sorts of excuses would be made, or no reason at all be given, especially if the journey was to be through a part of the island not often traversed. The bearers were easily hired, but not so easily *secured*. One man not turning up, another would go to seek for him, and he, in turn, would have to be hunted for by his companions.

Travelling in Madagascar, at least by the main lines of road, is fast losing its former characteristics. Along the easy gradients, the bridged streams, and the embankment-crossed swamps traversed now by good highroads, one is apt to forget how our bearers used to climb up steep and rugged ascents, ford rivers, sometimes up to their necks in rushing waters, and flounder through morasses. In fact, the bearers are becoming somewhat demoralised by these easy and smooth roads, and we now need to take a ride "across country" to realise what our early experiences here were.¹ Mr Street and I, however, managed to get a number of men, about fifty in all, to start with us; and as we were not at all sure of finding native huts to stay in all through our route, we took a tent with us, as well as provisions and clothes, and books to give away to the people who could read them. Towards the end of May we left the capital for our southern journey.

One more word of preface to this chapter. Like the tour around the Antsihànaka province, already described, this journey was, first of all, a missionary one; and although I shall not trouble my readers with details of this kind, it must be understood that my companions and I took every opportunity we had of speaking, not only to congregations, but also to any small gathering of people we came across, of the great and glad truths of the Gospel, of which we were the messengers.

I shall not describe here the route between Antanànarivo and Fianàrantsòà: the elevated tract of bare tableland, more than six thousand feet above the sea; the cultivated valleys of the three or four chief rivers; the green pleasant basins of Ambòsita and Ambòhinàmboàrina; the enormous rocks of Angàvo, and the belt of grey-lichened forest above Nàndihizana. There were, however, three points which struck me in the Bètsiléo province as being very different from what we see in Imèrina. First, was the much bolder and grander scenery; the mountains are higher in the south, and the gneiss and granite rocks rise up in

stupendous masses of stone, such as we do not often see in the northern province.

Then there was the elaborate system of rice cultivation, far surpassing anything that can be seen in Imèrina. This was noticeable after four days' journey, but it appeared to be carried to the highest point of perfection in the wide valley south of Ambòsitra. Not only are the valleys and hollows terraced, as in Imèrina—the *concave* portions of the low hills and lower slopes of the high hills—but the *convex* portions also are stepped up like a gigantic staircase for a great height. It was a pleasant sight to see, speaking of industry and skill and practical knowledge of hydrostatics ; for how water could be brought to some of the lower elevations surrounded by lower ground was more than we could discover. Many of these were terraced up to their highest point, the narrow lines of rice plot running round them in concentric circles, so that there was not a square yard of ground left unproductive.

The third particular in which the Bétziléo country differs—although the *past* tense would be now more appropriate—from Imèrina is in the variety and ornamental character of the tombs and other memorials of the dead. Leaving out of consideration the modern stone tombs erected in the vicinity of the capital, it is a remarkable fact that there is no native Hoya style of carving or ornamentation. Neither in their dwellings nor their tombs, neither in their household utensils nor their weapons, does there ever seem to have existed among the natives of Imèrina anything like indigenous art. But in Bétziléo there is carving both in the houses and the tombs ; the central posts of the former are elaborately ornamented, and also portions of the exterior woodwork ; and the curious massive timber posts, with framework for holding the skulls and horns of bullocks killed at funerals, have a variety of decoration which is well worthy of study.

The first thing that attracted my attention in travelling south, after four or five days' journey, was that the upright stones placed near graves were not the rough undressed slabs common in Imèrina, but were finely dressed and squared and ornamented with carving. Coming after that to Ambòsitra, I first met with one of the memorial posts just mentioned. This was a piece of timber, seven or eight inches square and about ten feet high, with pieces of wood projecting from a little below the top, so as



HIDE-BEARERS RESTING BY THE ROADSIDE
Ambàtovòry rock and wood are in the distance



BÉTSILÉO TOMBS WITH THE HORNS OF OXEN KILLED AT THE FUNERAL

to form a kind of stage. Each face of the post was elaborately carved with different patterns arranged in squares. Some of these were concentric circles, a large one in the centre, with smaller ones filling up the angles ; others had a circle with a number of little bosses on them ; others had a kind of leaf ornament, and in others parallel lines were arranged in different directions. The narrow spaces dividing these squares from each other had in some cases an ornament like the Norman cheiron, and in others, something similar to the Greek wave-like scroll. The whole erection with its ornamentation bore a strong resemblance to the old runic stones, or the manorial crosses of Ireland and the Scottish highlands.

A day or two's journey farther south brought us to a tract of country where there was a profusion of carved memorials scattered along the roadside, and in all directions visible on either hand. And on reaching a rounded green hill west of the road, the old and deserted village of Ikangàrà, we saw that there was a large number of tombs and memorial posts close together, so we went to inspect them more minutely. Within a short distance were some forty or fifty tombs, and on further examination there appeared to be at least half-a-dozen different kinds :

(1) The largest tombs—there were two of them—were of small flat stones, built in a square of some twenty to twenty-five feet, and about five feet high. But all around them was a railing of posts and rails, all elaborately carved with the patterns just described.

(2) Another kind of tomb was formed by a square stone structure, about twelve feet each way and four or five feet high, but on the top was an enclosure of carved posts and lintels about eight feet high, with a single carved post in the centre.

(3) A third kind of monument was a massive block of granite about ten feet high, with carved posts at the corners and touching them, and connected by cross-pieces ; on these the skulls and horns of the bullocks killed at the funeral of the person commemorated were fixed.

(4) Another kind of memorial was a massive square post of wood, about twenty feet high and fifteen inches square, carved on all four sides from top to bottom. There were four or five of these enormous posts here ; and in one case there was a pair of them, as if to form a kind of gateway.

(5) Still another kind was a great block of dressed granite, with iron hoops round the top, in which were fixed a dozen or more pairs of slender *iron* horns.

All the way along the road to Ambòhinàmboàrina we came across different combinations of memorial posts, and of dressed fine white granite in upright blocks, in many cases arranged in couples, so that they were very conspicuous all over the surrounding country. Before leaving the subject of ornamentation among the Bètsiléó, I may notice that the window shutters of their houses, the wooden fixed bedstead—looking more like a cupboard than a sleeping-place—and other portions of the interior, are (or were) elaborately carved with the patterns already mentioned and other designs.²

In the early part of June we left the Bètsiléó capital for the south, intending if possible to make our way through the forest to the south-east coast, and thence travel to Fort Dauphine, the southernmost Hova military station. The route south from Fianàrantsòà is for many miles through a valley between lofty hills; and there one gradually ascends to a point where the valley ends, and at a place called Ivàtoàvo (“high rock”) one gets a most extensive prospect, of a comparatively level plain stretching away for many miles, and dotted all over with the green ring-shaped *vàla* or homesteads of the Bètsiléó. This plain is surrounded with the grandest and boldest mountains, many of them rising sheer from the level in many hundred feet of bare gneiss rock, and in the most picturesque outlines. To the north-west one lofty spire of rock has a flat-topped head, much resembling the Pieter Botha mountain in Mauritius. I was afterwards told that it was formerly obligatory on a young man wishing to marry a girl from the district that he should carry his bride on his back to the summit of this rock, and bring her down again. It appeared as if one might almost as well attempt to scale a church spire; but probably there are crevices and hollows which would make such a feat not altogether impossible.

Our Sunday at a village on the plain was employed in our usual way, preaching there, and visiting other places. After speaking at a short service myself, I left my companion at mid-day to go to Iàritsèna, a village about five hundred feet above the level; but it really looked insignificant compared with the

towering rocks beyond it. The grand and varied forms of the mountains all around this plain filled me with an exultant kind of delight. To the south were a crowd of mountain-tops, peak beyond peak, with the greatest variety of outline: one had the appearance of a colossal truncated spire; another had a jagged saw-like ridge, another was like a pyramid with huge steps, and another was like an enormous dome; but the varieties were endless, and, as I passed along, the combinations of the giant masses of bare rock changed every minute. Their summits were never long free from clouds, and the changing effects of sunlight and cloud shadow could only have been caught by the rapid use of a camera. The summits of many of the peaks must be at least three thousand feet above the plain. These "everlasting hills," these "strong foundations of the earth," recalled passages in the Psalms and the Prophets, speaking of Him whose "righteousness is like the great mountains."

At my little village congregation this afternoon, many of the girls and women wore a circular ornament suspended from their necks; this was formed of the end of a *conus* shell ground down and generally with a red bead in the centre. This kind of decoration, called *félana*, is also worn by men among the Sàkalàva, but on the side of their temples, and by the Bàra people on the crown of their heads.

Until taking this journey I had not seen in any number the pretty little parakeet of which Madagascar possesses a peculiar species (*Psittacula madagascariensis*). But we noticed a large flock of these birds one day; and their light green plumage, with whitish breasts and greyish-white heads, render them rather conspicuous. They go in large flocks, often as many as a hundred together, and sometimes do considerable damage to the rice crops. The two sexes of this parakeet show great affection for each other, the pair sitting close together on their perch, from which habit they are often called love-birds.

Two species of parrot are among the denizens of the Malagasy woods almost all over the country. These parrots are both of sober plumage, one being dark grey in colour, and the other slaty-black. But they are both intelligent birds, and can easily be taught to speak a few words and to whistle a tune. Their long whistling cry, as if going up the gamut, may be frequently

heard in the outskirts of the woods. The grey species (*Coracopsis obscura*), which is the larger of the two, is *jàdy* or sacred with the chiefs of the Vèzo Sàkalàva, as they say that one of their ancestors was saved from death by hearing the shrill piercing cries of a flock of these birds. The black species (*Coracopsis nigra*) is about a third less in size. Both kinds are more terrestrial and less arboreal in their habits than most parrots, nor do they make much use of their claws to convey food to the mouth.

The following day, passing over a river close by Ambòhimandròso, we had a most awkward bridge to cross. The native engineer had made it in two spans, not, however, in a straight line, but forming almost a right angle with each other. There were two or three massive balks of timber; but as these were not on a level, and some had slipped down three or four feet, the passage over was neither easy nor pleasant. Many of our bearers hesitated a good deal, as the bridge was sixteen to eighteen feet above the water, which roared like a mill-race between the rough pier and the river banks.

All about this neighbourhood we noticed great numbers of ant-hills, of a much larger size than any we had seen elsewhere. They are conical mounds of a yard or so high, and are made by a white or yellowish ant, the one spoken of in a well-known Malagasy nursery tale. Breaking off a piece of one of the mounds, the ants could be seen in a state of great excitement, running in and out of the circular galleries which traverse their city. There are vast numbers of these ants in one ant-hill; they have a queen, who is nearly an inch long, while her subjects are not half that size. A serpent is said to live in many of these ant-nests, and the people maintain that it is eventually eaten by the inhabitants.

Between the point we had now reached and the sea is a great wooded and rounded mountain which we could see about twenty miles away, and which we found was the celebrated Ambòndrombé, the Malagasy Hades, in which they believed that the souls of their ancestors had their abode. There are said to be large caves in the mountain, and it is regarded with much superstitious fear by the people. The mountain looked dark and gloomy, and has a very regularly curved outline from north to south, looking like the segment of an immense circle.



MEMORIAL STONE, BÉTSILÉO PROVINCE

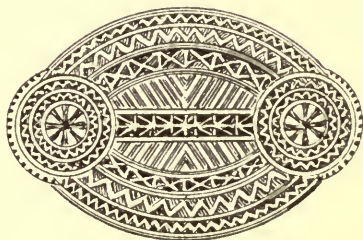
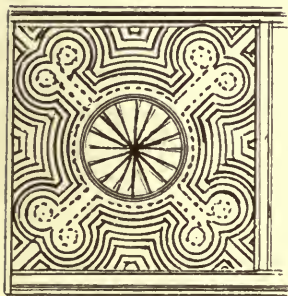
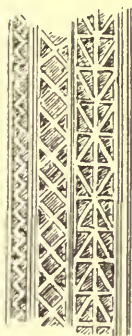
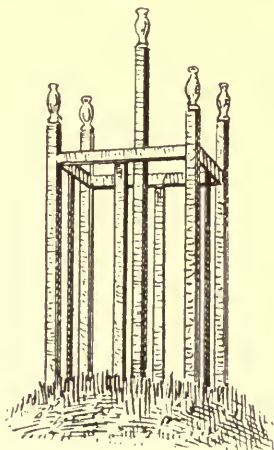
The iron horns at the top are in place of bullocks' horns usually placed on such memorials

About twenty miles to the east of our route, although perfectly hidden by the intervening rugged country and lines of forest-covered hills, is a very strongly defended Tanàla town called Ikòngo, a place which maintained its independence of Hova domination until the French conquest. With considerable difficulty and some personal risk, my friend, Mr G. A. Shaw, managed to gain permission to visit this stronghold and introduce Christian teaching. The native chief, who became very friendly, wished to become closely allied to him by the custom of *jàto-drà*, or *jàti-drà*. This is a curious ceremony, in use among many Malagasy peoples, by which persons of different tribes or nationalities become bound to one another in the closest possible fashion. The name for it of *jàto-drà*—i.e. “ bound by blood ”—denotes that its object is to make those entering into the covenant to become as brothers, devoted to each other’s welfare, and ready to make any sacrifice for the other, since they thus become of one blood.

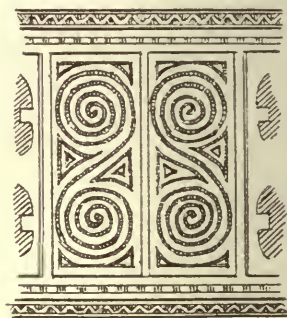
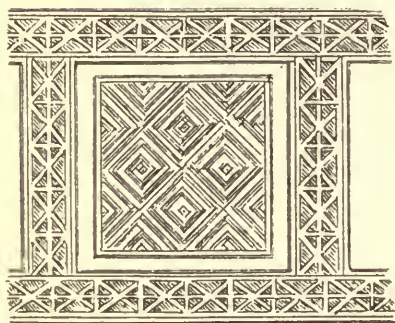
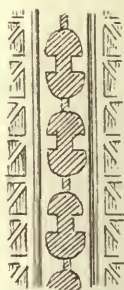
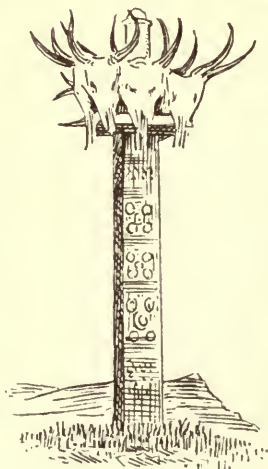
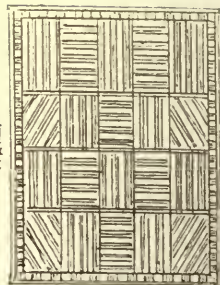
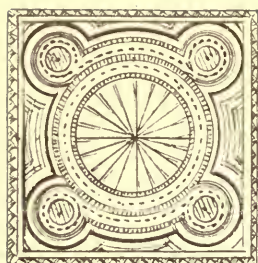
The ceremony consists in taking a small quantity of blood from the breast or side of each contracting party ; this is mixed with other ingredients, stirred up with a spear-point, and then a little of the strange mixture is swallowed by each of them. Imprecations are uttered against those who shall be guilty of violating the solemn engagement thus entered into. A few Europeans, who have overcome their natural disgust to the ceremonial, and to whom it has been a matter of great importance to keep on good terms with some powerful chief, have occasionally consented to make this covenant. Thus the celebrated French scientist, M. Alfred Grandidier, became a brother by blood with Zomèna, a chief of the south-western Tanòsy, in order to gain his good will and help in proceeding farther into the interior. But in his case the blood was not taken from the contracting parties, but from an ox sacrificed for the purpose ; the ceremony is then called *jamaké*. In this case, a pinch of salt, a little soot, a leaden ball, and a gold bead were put into the blood, which was mixed with water. Sometimes pulverised flint, earth and gunpowder are added to the mixture. In the case of Count Benyowski, who in 1770 was made king of a large tribe on the eastern coast, he and the principal chiefs sucked a little blood from each others’ breasts. The Hova formerly followed a similar custom, but with some

variations ; and so lately as 1897 a high French official made a somewhat similar covenant, with a principal chief in the extreme south of the island. The *jàto-drà* has doubtless been observed by the various tribes in all parts of Madagascar, but there appears to have been a good deal of difference in the details of the ceremonial attending it.

We spent a day at Imàhazòny, the last Hova military post in this direction, before plunging into the unknown route across the forest to the coast. The people from the little *vàla* (homesteads) came running out to see us as we went by, most of them having never seen a white face before. We noticed how different the Bétсилéo dialect is from the Hova form of Malagasy ; the *n* in the latter is always nasal (*ng*) in the former ; while numerous words are shorter than their equivalents as spoken in Imèrina ; and the consonantal changes are numerous. Besides this, the vocabulary is very different for many things and actions. About two hours' ride on the following morning brought us to the large village of Ivàlokiànja. We went into a house, the best in the village, for our lunch ; it was the largest there, but was not so large as our tent (eleven feet square), and the walls were not six feet high. The door was a small square aperture, one foot ten inches wide by two feet four inches high, and its threshold two feet nine inches from the ground ; so that getting into most Bétсилéo houses is quite a gymnastic feat, and it is difficult to understand how people could put themselves to so much needless inconvenience. Close to it, at the end of the house, was another door, or window (it was difficult to say which, as they are all pretty much the same size !), and opposite were two small openings about a foot and a half square. The hearth was opposite the door, and the fixed bedstead was in what is the window corner (north-west) in Hova houses. In this house was the first example I had seen of decorative carving in Malagasy houses ; the external faces of the main posts being carved with a simple but effective ornament of squares and diagonals. There was also other ornamentation, much resembling the English Union Jack. The gables were filled in with a neat plaited work of split bamboo. The majority of the houses in this and most of the Bétсилéo villages are only about ten or twelve feet long by eight or nine feet wide, and the walls from three to five feet high. Here-



TYPES OF CARVED ORNAMENTATION USED BY THE BETSILEO MALAGASY
IN THEIR BURIAL MEMORIALS AND THEIR HOUSES.



TYPES OF CARVED ORNAMENTATION USED BY THE BETSILEO MALAGASY
IN THEIR BURIAL MEMORIALS AND THEIR HOUSES.

abouts, the doors seem generally to face the north or north-west, and the house runs nearly east and west. Hova houses of the old style, on the contrary, are always placed with their length running north and south, and their single door and window facing the west—that is, on the lee-side of the house.

As Ambinàny, the Tanàla³ chief, whose village we were bound for, did not make his appearance, we went off in the afternoon to another village, Iòlomàka, about three or four miles away to the south-east. It was a cold unpleasant ride in the drizzling rain. We reached the village, which is situated on a bare hill, in an hour and a quarter, and with some difficulty found a tolerably level place on which to pitch the tent, but everything was wet. The rain came down faster than ever, and began to come through the canvas in some places. During the afternoon we in our tent formed for the villagers a free, and evidently popular, exhibition, which might have been entitled, “The Travelling Foreigners in their Tent.” We and our belongings, and our most trivial actions, were the subject of intensest interest to the people. They came peeping in and, uninvited, took their seats to gaze. I suspect they thought we travelled in a style of Oriental magnificence, for my companion’s gorgeous striped rug evidently struck them as being the *ne plus ultra* of earthly grandeur. But *we* did not look upon ourselves this evening quite in that light; for the slightly higher ground on two sides of the tent led the water *into* the structure, and there was soon a respectable-sized pool on my friend’s side of the tent, above which the boxes had to be raised by stones and tent-hammers; while the drip upon our beds raised the probability that we might be able to take our baths in the morning before getting up. It was our dampest experience hitherto of tent life.

The following evening found us at Ivòhitròsa, after one of the most difficult and fatiguing journeys we had ever taken in Madagascar. It was quite dark when we arrived here, wet, weary, muddy and hungry, having eaten no food since the morning.

But to begin at the beginning. Bed was so much the most comfortable place, with a wet tent, a small pond at one end of it, and a mass of mud at the other, that we did not turn out so early or so willingly as usual, especially as there was a thick

mist and heavy drizzle, as there had been all night. The general public outside, however, evidently thought it high time the exhibition opened for a morning performance; and so, without our intending it, there *was* a performance, which, if there had been a daily paper at Iòlomàka, might have been described as consisting of five acts or scenes, as follows:—*Scene first*: Distinguished foreigners are seen lying in bed, so comfortably tucked up that they feel most unwilling to get out on to the wet and muddy floor. Curtains only half drawn (by an eager public) during this act. *Scene second*: Somewhat of a misnomer, as D. F. were, by the exercise of some ingenuity, *not* seen during the operations of bathing and washing. *Scene third*: D. F. seen by admiring public—who again admitted themselves—in the act of brushing their hair and performing their toilet. *Scene fourth*: D. F. seen at their breakfast; the variety of their food, dishes, plates, etc., a subject of mute amazement. *Scene fifth and last*: D. F. seen rapidly packing up all their property for their approaching departure. *N.B.*—Probably their last appearance on this stage. We packed up in the heavy drizzle, and fortunately, just as we were about to start, three or four Tanàla came up and agreed to be our guides. We had to wait until they had their rice, but at last we got away, soon after ten o'clock, rather too late as it turned out.

Our way for more than two hours was through the outskirts of the forest: a succession of low hills partially covered with wood, and divided from each other by swampy valleys. In these we had two or three times to cross deepish streams by bridges of a single round pole, a foot or two *under* water, a ticklish proceeding, which all our luggage bearers did not accomplish successfully. After crossing a stream by the primitive bridge of a tree which had fallen half over the water, we entered the real forest, our general direction being to the south-east.

And now for an hour and a half we had to pass through dense forest by a narrow footpath, where no *filanjàna* (palanquin) could be carried (at least with its owner seated on it). Up and down, down and up, stooping under fallen trees, or climbing over them, soon getting wet through with the dripping leaves on either hand, and the mud and water underfoot—we had little

time to observe anything around us, lest a tree root or a slippery place should trip us up. At two-fifteen we came to an open clearing, and thought our difficulties were over, but presently we plunged into denser forest than ever, and up and down rougher paths. Notwithstanding the danger of looking about, it was impossible to avoid admiring the luxuriance of the vegetation. Many of the trees were enormously high, and so buttressed round their trunks that they were of great girth at the ground. The tree-ferns seemed especially large, with an unusual number of fronds; and the creeper bamboo festooned the large trees with its delicate pinnate leaves.

It soon became evident that we were descending, and that pretty rapidly. For a considerable distance we had a stream on our left hand, which roared and foamed over a succession of rapids, going to the south-east; and every now and then we caught glimpses of the opening in the woods made by the stream, presenting lovely bits of forest scenery in real tropical luxuriance. The sun shone out for a few minutes, but presently it clouded over, and heavy rain came on. The increasing roar of waters told of an unusually large fall, and in a few minutes we came down an opening where we could see the greater part of it, a large body of water rushing down a smooth slope of rock about a hundred feet deep, and at an angle of forty-five degrees. Three or four times we had to cross the stream, on rocks in and out of the water, with a powerful current sweeping around and over them. We found after a while that we had come down to the side of a deep gorge in the hills which rose hundreds of feet on each side of it, and down which the stream descended rapidly by a series of grand cascades to the lower and more open country which we could see at intervals through openings in the woods.

At half-past four we emerged from the forest and came down by a steep slippery path through bush and jungle. And now there opened before us one of the grandest scenes that can be imagined. The valley, down which we had come, opened out into a tremendous hollow or bay, three or four miles across, and more than twice as long, running into the higher level of the country from which we had descended. The hills, or, rather, edges of the upper plateau, rise steeply all round this great bay, covered with wood to their summits, which are from two

thousand to three thousand feet above the lower country. Between these bold headlands we could count four or five waterfalls, two of them falling in a long riband of foam several hundred feet down perpendicular faces of rock. Between the opening points of this great valley, three or four miles apart, could be seen a comparatively level undulating country, with patches of wood and the windings of the river Mâtitànana. On a green hill to the north side of the valley was a group of houses, which we were glad to hear was Ivòhitròsa, our destination. This hill we found was seven hundred feet above the stream at its foot, but it looked small compared with the towering heights around it. At last we reached the bottom of the valley, crossed the stream, and presently commenced the steep ascent to the village. It was quite dark before we reached it, muddy, wet and tired out ; we had been eight hours on the way, and five and a half on foot over extremely rough and fatiguing paths. The native chief and his people had overtaken us in the forest and went on first to prepare a house for us.

We found that the best dwelling in the village was ready, and a bright fire blazing on the hearth. It was with some difficulty that we got all our baggage arranged inside, for, although the largest house available, it was rather smaller than our tent, and nearly a quarter of it was occupied by the hearth and the space around it. At one side of the fire were sitting four young women, the daughters of the chief. A glance at these young ladies showed us that we had come into the territory of a tribe different from any we had yet seen. They were lightly clothed in a fine mat wrapped round their waists, but were highly ornamented on their heads, necks, and arms. A fillet of small white beads, an inch or so wide, was round their heads, fastened by a circular metal plate on their foreheads. From their necks hung several necklaces of long oval white beads and smaller red ones. On their wrists they had silver rings, and a sort of broad bracelet of small black, white, and red beads ; and on every finger and on each thumb were rings of brass wire. In the glancing firelight they certainly made a striking picture of barbaric ornamentations ; and notwithstanding their dark skins and numerous odd little tails of hair, some of them were comely enough. We had soon to ask them to retire in order to stow away our packages and get some tea ready. The house

was raised a foot or so from the ground, the inside lined with mats, and so was a pleasant change from our damp lodgings of the previous evening.

Next morning, on opening our window, we had before us, two or three miles across the great basin or valley, three waterfalls, one descending in a long white line and almost lost in spray before it reaches the bottom. The sunlight revealed all the beauties of the scene around us, and made us long for the power to transfer to canvas or paper its chief outlines. Were such a neighbourhood as this in an accessible part of any European country, it would rapidly become famous for its scenery. We found the village of Ivòhitròsa to consist of twelve houses only, enclosed within a *ròva* of pointed stakes ; but besides these are several rice-houses or *tràno àmbò* (" high houses ") mounted on posts five or six feet above the ground, each post having a circular wooden ring just under the flooring rafters, and projecting eight or nine inches, so as to prevent the rats ascending and helping themselves to rice. I sincerely wished last night that the dwelling-houses had a similar arrangement, for the rats had a most jovial night of it in our lodgings, being doubtless astonished at the number and variety of the packages just arrived. The house we are in, as well as others in the village, has carved horns at the gables, not the crossed straight timbers so called in Hova houses, but curved like bullocks' horns. The people appear to have no slaves here, for the daughters of the chief, in all their ornaments, are pounding rice, four at one mortar.

At this part of the island the high interior plateau seems to descend by *one* great step to the coast plains, and not by *two*, as it does farther north ; for our aneroid told us that we came down twenty-five hundred feet yesterday, and that the stream at the foot of this hill is only five hundred or six hundred feet above sea-level. And the two lines of forest one crosses farther on are here united into one.

The men and many of the women wear a rather high round skull-cap made of fine plait ; the women wear little except a mat sewn together at the ends, so as to form a kind of sack, and fastened by a cord round the waist, and only occasionally pulled up high enough to cover the bosom. Those who are nursing infants have also a small figured mat about eighteen

inches square on their backs and suspended by a cord from the neck ; this is called *lòndo*, and is used to protect the child from the sun or rain, as it lies in a fold of the mat above the girdle. Some of the men wear a mat as a *làmba*, and only a few have *làmbas* of coarse *rofia* or hemp cloth. The people here blacken their teeth with a root, which gives them an unpleasant appearance as they open their mouths ; not all the teeth, however, are thus disfigured, but chiefly those at the back, leaving the front ones white ; in some cases the lower teeth are alternately black and white.

The morning of one of our four days at Ivòhitròsa was employed in trying to get a good view of the largest of the waterfalls which pour down into the large valley already mentioned. Mounting a spur of the main hills, we had a good view of this chief fall up a deep gorge to the south, and so opening into the main valley as not to be visible from the village. This is certainly a most magnificent fall of water. The valley ends in a semicircular wall of rock crowned by forest, and over this pours at one leap the river Màtitànana. Knowing the heights of some of the neighbouring hills, we judged that the fall could not be less than from five hundred to six hundred feet in depth, and from the foot rises a continual cloud of spray, like smoke, with a roar which reverberates up the rocky sides of the valley ; even from two or three miles' distance, which was as near as we could get, it was a very grand sight.

While on this little excursion we had a feast of another kind. On our way home we came across a large cluster of bushes full of wild raspberries. This fruit is common on the borders of the forest, but we never before saw it in such quantities, or of so large a size, or of so sweet a taste. The Malagasy raspberry is a beautiful scarlet fruit, larger than the European kind ; and while perhaps not quite equal in flavour to those grown in England, is by no means to be despised ; and we were able on that day to enjoy it to our heart's content.

During our stay at Ivòhitròsa we were surprised and delighted with the brightness and intelligence of many of the native boys. Although the dialectic differences of the Tanàla speech are many as compared with the Hova form of Malagasy, we obtained a large vocabulary from them as well as names of the forest birds and animals, and also those of trees and fruits.



A GROUP OF TANÀLA GIRLS IN FULL DRESS



TANÀLA GIRLS SINGING AND CLAPPING HANDS

And as these forests and their vicinity are the home of several of the lemurs which have not yet been noticed in these pages, I will here give some particulars of four or five species.

The ring-tailed lemur (*Lemur catta*) is perhaps the best known of all the lemuridæ, from its handsomely marked tail, which is ringed with black and white bands, thus clearly distinguishing it from all the other species of the sub-order. And while almost every other lemur is arboreal, this species lives among the rocks, over which they can easily travel, but can be only followed with great difficulty. The palms of their hands are long, smooth and leather-like, and so enable these animals to find a firm footing on the slippery wet rocks. The thumbs on the hinder hands are very much smaller than those of the forest-inhabiting lemurs, as they do not need them for grasping the branches of trees. Their winter food is chiefly the fruit of the prickly pear; while in summer they subsist chiefly on wild figs and bananas. This species bears a sea voyage fairly well, so that they are often seen in Mauritius and Réunion, and even more distant places.

Another species of lemur, which inhabits the south-eastern forests, is the broad-nosed gentle lemur (*Hapalemur simus*). This animal is found among the bamboos, and it appears to subsist in a great measure on the young shoots of that plant. For biting and mincing up the stalks its teeth seem admirably adapted, as they are nearly all serrated cutting teeth, and are arranged so as mutually to intersect. It eats almost all the day long, and has a curious dislike of fruit. It is furnished with a remarkably broad pad on each of the hinder thumbs, so that it is able to grasp firmly even the smallest surfaces.

Perhaps the most beautiful and interesting—as well as the smallest—lemuriæ animals inhabiting Madagascar belong to the group called Cheirogale, or mouse-lemurs, of which there are seven species. As their name implies, they are very small, the dwarf species (*Cheirogaleus minor*) being only four inches long, with a tail of six inches. This pretty little animal is remarkable also for its large and very resplendent eyes, for the eye admits so much light at dusk that quite an unusual brilliancy is produced. The brown mouse-lemur (*Cheirogaleus major*) is larger than the last-named species, being seven or eight inches long. Most, if not all, of the species live in the

highest trees, and make a globular nest of twigs and leaves ; they all appear to be nocturnal animals, as one might suppose from the structure of their eyes. The smallest, or dwarf, species, is said to be very shy and wild, very quarrelsome and fights very fiercely. Some of these little animals, if not all of them, have a time of summer sleep ; and the tail, which is grossly fat at the beginning of that period, becomes excessively thin at its close, its fat being slowly absorbed to maintain vitality. The two (or three) species of mouse-lemur here noticed inhabit the south-eastern forest region ; others appear to be confined to the north-western woods.

¹ A writer in a defunct newspaper, *The Madàgascar Times*, of 10th August 1889, describes in so true and graphic a fashion the old style of Malagasy *filanjàna* bearers, in the following rhymes, that I think they are well worth preserving in these pages :—

Bearing their burdens cheerily, laughing the livelong day,
Pacing o'er dale and mountain, wending their toilsome way ;
 Puffing and panting, up hills steeply slanting,
 Skilfully bearing the *filanjàna* canting,
Grumbling not at the sun's scorching ray.
 Wading through swamp and brooklet, splashing their
 course along,
 Bounding through plain and forest, thinking the track not
 long.
Chattering and pattering, with tongue ever clattering,
Joyous if of it the Vazàha has a smattering ;
 Growling not at the rain's stinging thong.
Pacing with even footsteps, never losing time,
Changing places racing, like the measured beat of rhyme.
 Lifting and shifting, but never desisting,
 Always each other with pleasure assisting ;
Happy through all the toiling daytime.
 Tramping with wondrous vigour, moving with easy grace,
 Pausing not in their journey, dashing as in a race ;
Smiling and wiling, for a present beguiling,
Ever joke-cracking, if the Vazàha is not riling—
 Such is the life of our native *mpilànja*,
 This is the marvellous way that they keep up the pace !

Note.—"Vazàha" is the native word for Europeans ; *mpilànja* means a *filanjàna* bearer.

² My friend, Mr G. A. Shaw, who was connected for several years with the Bétsiléo Mission, made a number of "rubbings" of this peculiar ornamentation. On exhibiting many of these at the Folk-lore Society, when I read a paper on this subject, one of the members expressed a strong opinion that these patterns must have had originally some religious signification; and another member remarked that the patterns closely resembled those on articles from the Nicobar Islands.

³ The word "Tanàla," which simply means "forest dwellers" (*àla*=forest), is a name loosely given to a number of tribes of the south-east, who inhabit the wooded regions and the adjacent country. All, however, have their proper tribal names and divisions.

CHAPTER XIX

IVÒHITRÒSA

OUR Sunday at Ivòhitròsa was such a novel and interesting one that I shall depart for once from my rule of omitting in these chapters mention of our religious work. It was a wet morning, so that it was after eleven o'clock before the rain ceased and we could call the people together. A good many had come up from the country round on the previous day to see us, and we collected them on a long and pretty level piece of rock which forms one side of the little square around which the houses are built. When all had assembled, there must have been nearly three hundred present, including our own men, who grouped themselves near us. It was certainly the strangest congregation we had ever addressed, for the men had their weapons, while the women looked very heathenish. Some few had put some slight covering over the upper part of their bodies, but most were just as they ordinarily appeared, some with hair and necks dripping with castor oil, and with their conspicuous bead ornaments on head, neck, and arms. One could not but feel deeply moved to see these poor ignorant folks, the great majority of them joining for the first time in Christian worship, and hearing for the first time the news of salvation. And remembering our own ignorance of much of their language, the utter strangeness of the message we brought, and the darkness of their minds, we could not but feel how little we could in one brief service do to quicken their apprehension of things spiritual and eternal. We had some of our most hearty lively hymns and tunes, our men assisting us well in the singing; after Mr Street had spoken to the people from a part of the Sermon on the Mount, I also addressed them, trying in as simple a manner as was possible to tell them what we had come for, what that "glad tidings" was which we taught them. On account of the rain, work in the afternoon had to be confined to what could

be done in our tent, which was crammed full, and in our house.¹

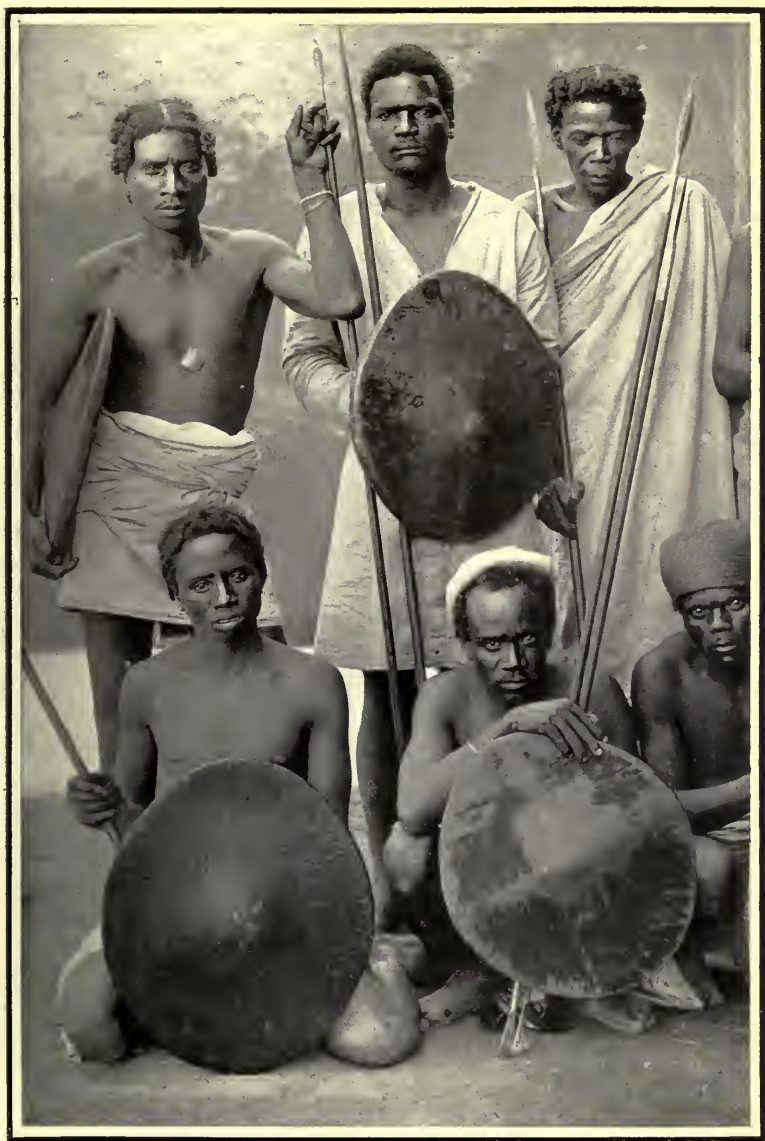
That there was great need for enlightenment may be seen from what we heard from the people themselves—viz. that there are (or were) eight unlucky days in every month, and that children born on those days were killed by their being held with their faces immersed in water in the winnowing-fan. So that on an average, more than a quarter of the children born were destroyed! The Tanàla names for the months are all different from those used in Imèrina; they have no names for the weekdays, and indeed no division of time by sevens, but the days throughout each month (lunar) are known by twelve names, some applied to two days and others to three days consecutively, and these day names are nearly all identical with the Hova names for the months. Each of the days throughout the month has its *jàdy*, or food which must not be eaten when travelling on that day.

After our four days' stay at Ivòhitròsa, we managed to get on our way towards the coast, not, however, without having considerable difficulty with our bearers, who were afraid of any new and hitherto untried route, for we were the first Europeans to travel in this direction. By tact and firmness we managed to secure our point; and on the Thursday afternoon we came down to the river Mâtitàana, which is at this point a very fine broad stream, with a rapid and deep current. It flows here through a nearly straight valley for four or five miles in a southerly direction, with low bamboo-covered hills on either side, and its channel much broken by rocky islands. To cross this stream, about a hundred yards wide at this place, no canoes were available, but there was a bamboo raft called a *zàhitra*.

Of all the rude, primitive and ramshackle contrivances ever invented for water carriage, commend me to a *zàhitra*. This one consisted of about thirty or forty pieces of bamboo, from ten to twelve feet long, lashed together by bands of some tough creeper or *vàhy*, which said bamboos were constantly slipping out of their places and needed trimming at every trip, and the fastenings had to be refixed. The *zàhitra* would take only two boxes and one man at a trip, besides the captain of the raft, and when loaded was from a third to a half of it under water,

The civilisation of the people about here seemed to have not yet produced a paddle; a split bamboo supplied (very imperfectly) the place of one. Owing to the strong current and the feeble navigating appliances available, not more than about four trips over and back again could be made in an hour. And so there on the bank we sat from a little after two o'clock until nearly six, watching the ferrying over of our baggage, and then of our bearers. At sunset a good number of our men were still on the wrong side of the water, and so, as there was no possibility of getting them all over that day, and neither Mr S. nor I relished the prospect of a voyage on a *zàhitra* in the dark, we crossed at a little after sunset. We made a safe passage, but got considerably wet during its progress; Mr. S. took an involuntary foot-bath, and I a sitz-bath. The rest of our men returned to a village overlooking the river, while we went a little way up the woods and, finding a level spot, pitched the tent there, our bearers who had crossed occupying two or three woodcutters' huts which were fortunately close at hand.

During the three or four hours' waiting on the river bank we had a good opportunity of observing the people from the village just above, who came down to watch our passage over the water. Amongst them was a girl whose appearance was so striking that I must attempt a description of her. She was a comely lassie, although a dark-skinned one, and was so ornamented as to be conspicuous among her companions even at some distance. Round her head she had the same fillet of white beads with a metal plate in the front which we had observed at Ivòhitròsa, but from it depended a row of small beads like drops. On each side of her temples hung a long ornament of hair and beads reaching below her chin, several beads hung from her ears, and a number of white and oblong beads were worked into her hair at the back. Round her neck she had six strings of large beads, and another passing over one shoulder and under the arm. On each wrist were three or four silver bracelets, while on every finger and thumb were several coils of brass wire. Her clothing was a piece of bark cloth fastened just above the hips, over a skirt of fine mat, and on each toe was a brass ring. Thus "from top to toe" she was got up regardless of expense; she was probably the daughter of the chief; anyhow, she was evidently the village belle, and seemed well aware of the fact.



TANALA SPEARMEN

Note the wooden shields covered with bullock's hide, and the charm on a man's breast. They are very expert spearmen

Our route towards the sea was now over a comparatively level country, but not without many steep ascents and descents, and generally following the valley of the Mâtitanana. As I took with me a good theodolite, I was able to make a running survey of a large portion of our journey, and to map, for the first time, that river valley. The path was often hidden by long grass which was much higher than our heads, the bearers' feet being frequently hurt by the sharp prickly grass called *tsèvoka*. We had beautiful views of the river, and the foliage became most luxuriant; the valleys were full of the elegant traveller's tree, while in front of us whole hills were covered with the lovely light green of the bamboo, with its graceful curving head and fine pinnate leaves at every joint.

A very prominent feature in the vegetation of many places we passed through was the *longòzy*, a plant which seemed frequently to prevent anything else from growing (*Amomum angustifolium*). It has a rod-like stem, rising sometimes from twelve to fourteen feet high, with leaves a foot or more long, growing alternately on each side the stem. At the base grow the fruits in a bright, smooth, scarlet husk, two or three inches long, enclosing a white silky-looking pulp containing a number of purplish-black seeds, the cardamom of commerce. The pulp has a pleasant acid taste, but if one of the seeds is broken a pungent burning sensation is experienced at the back of the mouth.

The better kind of houses in these Tanàla villages have the walls made of bamboo flattened and plaited together, while the poorer ones are of the leaves of the traveller's tree. Every house is roofed with the latter material; in many of them the gable projects at the ridge twice as much as at the eaves, so as to make a kind of pent at each end. The gable timbers are frequently cut into a very exact resemblance to ox horns. In most of the villages money seems of little use to the people; they value beads or calico much more. Every woman and girl, and many of the men and boys, are decorated with beads, and these seem an important part of their property. Their religion seems to consist chiefly of charms; charms against guns, fever, crocodiles, etc. We purchased for a little cloth a charm against gun-shot; this consisted of three hollow tin receptacles resembling crocodiles' teeth, joined together and filled with

what looks like coarsely cut tobacco. The former owner tells us that this charm has such virtue that a musket ball is turned aside from the fortunate wearer. Many of the people carry shields, which are made of a circular piece of tough wood, about eighteen inches in diameter and covered with undressed bullocks' hide. A handle is cut out of the solid wood at the back. The women in this Mâtitànana valley carry a broad knife or chopper stuck in their girdles, and resembling in shape a butcher's cleaver, with a short round handle ; this is used for cutting up manioc and other roots.

At one point on our route we passed through a dense jungle of bamboo, requiring a bright look-out on the part of the bearers—and the borne as well—to avoid damage from the sharp-edged stumps underfoot, and the stems and tendrils overhead. But the effect of the numberless thickly set, smooth, jointed stems, like slender columns below, and the feathery canopy of delicate green above, was both curious and beautiful. At one little stream we passed some fine specimens of the *hòfa*, a screw-pine or pandanus, with the aerial roots in a cone-shaped mass, rising five or six feet above the ground. A very common tree about here is one with clusters of large leaves like those of a horse-chestnut, and with a hard mottled green fruit as big as a lemon, from which gum is made.

In a small open space among the trees we passed by almost the only sign we had yet seen of anything like religious observances in the Tanàla country. This was an upright stake in the ground with a number of bamboos arranged round it, forming a cone-shaped erection ; in front of this several stones were fixed. At this rude altar the heads of cattle, fowls, etc., are thrown as expiatory offerings ; and here also the people come to pray for blessings which they desire, especially for children. We also passed on another day a long flat stone supported by several smaller ones, forming a sort of altar, and used for the same kind of offerings as those just described.

Following in the main the course of the river Mâtitànana, we had frequently to cross its tributaries, and found we were advancing in civilisation as we proceeded. First, we had a single *zàhitra* to ferry us over ; then two *zàhitra* and a small canoe ; then we got good-sized canoes. A little after leaving the ferry we passed through a large clump of immense banana-



COIFFURES

Various styles of hairdressing among the Hova Malagasy women. The upper figure on the right is in mourning with her hair dishevelled

trees. They were at least forty feet high, and with their smooth green stems—almost trunks—and grand broad leaves, and great clusters of fruit, presented a magnificent appearance. The fruit is called *òntsy*; these are about a foot long and a couple of inches thick, and so a single one makes a fair meal.

For several miles the river makes a great bend to the north, and on following its banks again we saw crocodiles for the first time on this journey. These were basking in the sunshine, perfectly motionless, on a group of rocks just showing above the water. At the distance we were I should not have noticed them but for my men pointing them out; but with the glass every scale could be seen, and very unpleasant-looking creatures they are in their slimy length, with serrated back and tail, and rather small heads. Near them were several large wading-birds, some white and others dark brown, and called *àrondòvy* (i.e. "protector of the enemy"). These birds are constant attendants on the crocodiles, performing some service for them; and where the birds are seen, the reptiles are never far distant. We afterwards noticed that near all the villages on the river-banks a small space in the water was enclosed with stakes, so that the women and children coming to draw water could do so without fear of being seized by a crocodile, or swept off into the stream by his tail.

From a remote period the Malagasy have been accustomed to resort to ordeals for the detection of crime, and the ordeal by the *tangèna* poison has already been referred to in these pages (see Chapter III.). But among the Tanàla tribes an ordeal of another kind was commonly employed to find out a guilty person; for anyone suspected of wrong-doing was taken to the bank of the Mâtitànana, or one of its tributaries, where crocodiles abound. The people having assembled, a man stood near the accused, and striking the water thrice, addressed a long speech to the reptiles, adjuring them to punish the guilty, but to spare the innocent. The accused was then made to swim across the river and back again; and if he successfully accomplished this, and was not hurt by the crocodiles, he was considered innocent, and his accuser was fined four oxen. If, on the contrary, he was seized and killed, he was supposed to have justly merited his fate. This ordeal was termed *tangèm-voàvy* (*voàvy*=crocodile).

As we proceeded nearer the coast, we found by the style of hairdressing among the women that we had come into the territory of a different tribe to that amongst whom we had been travelling. Many of the young women had a singular but somewhat elegant style of coiffure. It was done thus : the hair was plaited in very fine braids, and then twisted into thin flat circular coils of from two to two and a half inches in diameter ; these were symmetrically arranged, one overlapping the other, in two rows, the upper one completely encircling the head from the forehead to the back of the neck, and the other ending below the ears. These young girls really looked well, for they had the appearance of being well dressed. The women here were more fully clothed than those of the Tanàla ; the skirt of fine mat is worn here, but there is more of it, and hemp cloth seems in more common use.

The country became flatter, undulating, but with no prominent rising grounds. The vegetation also was quite different from what we had become accustomed to during the last four days. There were no more bamboos, hardly any traveller's trees, but large numbers of single trees or small clumps of them. These were chiefly the *adàbo*, a species of *Ficus*, a tree with massive smooth trunk and light brown bark ; they have a much more rounded and shapely outline than the forest trees, and give the scenery quite an English appearance. But the presence of an occasional fan-palm or cocoanut-palm lifting their tall plumes aloft soon dispelled the illusion. The villages, too, became numerous, and many of them are built five or six together—that is, in lines of as many, only a short distance between them.

We had a curious congregation on the Sunday at one of the two villages where we spoke to the people, of whom a good many collected together. But as heavy showers came on, most of our auditors were standing under the elevated rice-houses (*tràno-àmbo*), as we also were. Still we were able to speak a few earnest words to them. Almost in the midst of our speaking, the old chief of the village came up to give us—a bottle of rum ! and a fowl. The former of these presents, as well as others of the same kind, were, as soon as darkness set in, carried outside, and poured on the ground as the best way of disposing of their contents. We were glad to find that the Taimòro, among whom we had now come, did not, like the Tanàla, kill children born on



A FOREST RIVER
Immense arums (viha) are in the foreground, and reflections of Travellers' trees are seen in the water

unlucky days, but by some ceremonies and offerings avert the evils supposed to be connected with them.

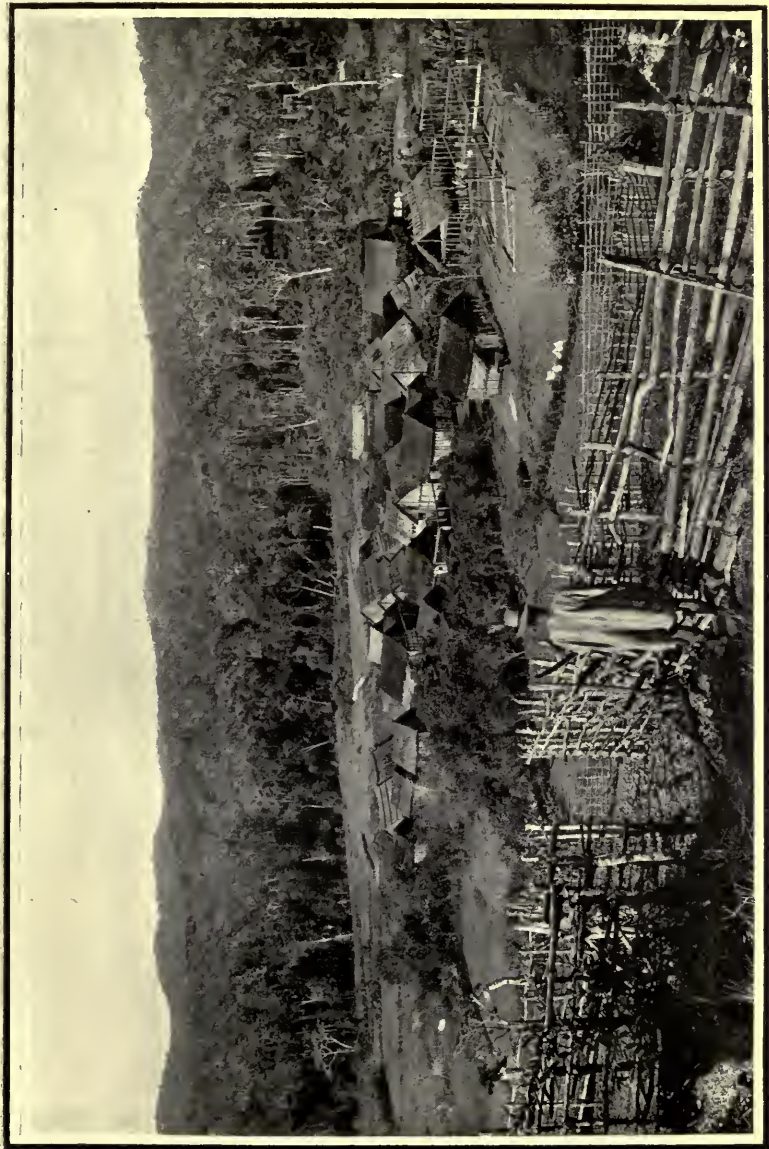
A week's journey from Ivòhitròsa brought us to a Hova military post again—viz. to the town of Ambòhipèno, which is only a few miles from the mouth of the Mâtitanana river, and is the central one of a line of three villages. Here we had a hospitable reception from the governor and his officers, as well as from the congregation and its pastor. Although the sea was still some miles distant, we could distinctly hear the roar of the surf some time before reaching Ambòhipèno. On a voyage to the seaside, which we made the day after our arrival, we had a fine large canoe which had more sharply pointed stem and stern than in those seen in Imèrina. We were struck by the great arums (*viha*) growing in thick masses along the banks in the water. These were from twelve to fifteen feet high, with thick fleshy stems and leaf-stalks, lily-like leaves, between two and three feet long, and magnificent white flowers, with a scarlet pistil. The fruit is occasionally used by the natives as an article of food. We picked up some good shells (*Turritellæ*, *Cypræa*, etc.) on the seashore, as well as corals, seaweed and sponges. Like almost every river on the east coast, the mouth is closed by a sand bar, until the rains of the wet season fill the river so full that the bar is broken for a few weeks, and then the south-east winds and currents close it up again.

The greater part of two days were spent at Ambòhipèno in services and school examinations, which latter were especially interesting and satisfactory. We were amused by the decoration of the pulpit in the native church, which was rather extraordinary. It was a high box-like affair, part of the front being occupied by a picture of a European ship, the other part by a church with a tall tower and spire; while over these was a text (in Malagasy), "Says the owner of this house, Fear"; although it would be difficult to find the passage in this exact form. These objects, together with birds perched on trees, made a curious mixture of subjects for pulpit decoration.

In the narrow lanes near the village we passed great numbers and many varieties of butterflies in a few minutes' ride. Judging from what we saw, an entomologist would find a rich harvest in the Taimòro country. Dr Vinson, a French naturalist who came up to the capital in 1862, says: "The habits of the

lepidoptera are much affected in Madagascar by atmospheric changes. In the misty mornings everything sleeps or hides itself under the damp foliage, but as soon as the sun shines out, the forest, the footpath, the beds of the torrents, are peopled with bright-coloured and light-flying butterflies. They give themselves up to all kinds of frolic with a wanton joy; they court, they pursue, they fly, interlacing and eddying in their flight in the air like the brilliant flakes of a coloured snow." In travelling up through this eastern forest a few years later, but in the hotter season of the year, I was struck by the number and variety of the butterflies which crossed our path. There was the rather common one of greyish-green with dark markings, the blackish-brown one with two large blue spots, the widely distributed warm brown one with black-edged wings, the pure white one, the white with orange edges, the white with black edges, the white with small black spots near the edge of the wings, the small yellow species, the small buff one, the white with crimped edges, the minute brown and blue, and many others. In damp places, a cloud of the smaller yellow and buff kinds may be often seen sipping the moisture.

While staying near the forest I was several times struck by the curious formation of the wings of one of the smaller species of butterfly. The insect in question is of plain inconspicuous colouring, chiefly shades of brown, and when at rest sits with the wings erect. The noticeable point is that there are several strongly marked and dark-tinted processes from the hinder part of the wings, which resemble the head, eyes and antennæ of a butterfly, so that when at rest it is very difficult to say which is the head and which is the tail of the insect. The tail markings and points are so much more strongly emphasised than the actual head and antennæ, that it is only when the wings slightly open that one is undeceived. Mimicry of one insect by another, and mimicry of leaves, grass, etc., by insects, are of course well-known facts, but I do not remember to have seen any similar instances noticed of resemblance between the different parts of the same insect; but may not the reason of this mimicry of the head by the tail be of some service in directing the attention of birds and other enemies to the less vital part of the butterfly's structure? It is evident that the hinder portion of the wings might be snapped at and broken off, and



ANĀLAMAZĀOTRA, A VILLAGE IN THE GREAT FOREST

Cattle pens and characteristic forest trees are shown



yet no serious injury be done to the vital parts of the insect. However this may be, the point appears to me to be worth noting down as a curious fact.

Talking with the people in the evening, we found we were in one of the districts where the Arab influence must have been very strong in former times. They are called Zafin Ibrahim (descendants of Abraham), and told us they were connected with the Jews. There is no doubt, however, that the Arabs had anciently an important settlement here, and to some extent taught the use of Arabic letters and literature; but being isolated from their fellow-countrymen and co-religionists, they gradually became absorbed in the native population. It is probable that many of the chiefs of the south-east tribes are of Arab descent, and so are often lighter in colour than the mass of the people. An intelligent young man gave me a paper containing all the Arabic characters and many of the syllabic sounds, with their equivalents in Malagasy. He had, about six years previously, copied out for M. A. Grandidier, who was then exploring the coasts of Madagascar, a number of extracts from native Arabic books of prayers, genealogies, and sorcery. This young man's father, then dead, was one of the *ombiasy* or diviners, and his books of charms and incantations, being supposed to be connected with idolatry, were destroyed at the time of the burning of the idols in 1869. A few years after our journey, two of the Bétsiléo missionaries, when making an evangelistic tour among the south-east tribes, obtained some pages of manuscript from this neighbourhood. These were apparently written in Arabic; and on being submitted to an expert in that language, were pronounced to be extracts from the Koran, evidently copied by someone who did not know Arabic, and so were full of errors; these quotations were no doubt used as charms and invocations. (I may here notice that, very recently, copies of the Malagasy scriptures have been boiled by the native diviners, and the water sold as a very powerful charm!)

Being near the sea, we had opportunities of seeing many birds which are oceanic in their distribution, among which are the frigate-birds (one species), and the tropic-birds (two species). The former are true pirates, living almost in dependence upon other fishing birds, whom they force, when these are weaker

than themselves, to give up the fish they have taken. But they do also fish for themselves, darting down upon the surface of the water. The white tropic-bird is also an expert fisher, plunging sometimes to a great depth after its prey. They remain all night on their nest, leaving it at sunrise to fish in the open sea. After heavy storms the frigate-bird is occasionally seen quite in the interior, being apparently driven inwards by the violence of the wind.

Of the sea-birds proper, there are about a score kinds frequenting the coasts of Madagascar, including those widely spread and powerful-winged species belonging to the terns, the noddies, the gulls, and the petrels. Very little, however, has been noted here as to their habits, and they probably differ little, if anything, from their fellows which are found all over the world. One of the terns comes up into the interior, and has been shot in Imèrina, and so also has one of the gulls; another is common on the Alaotra lake in Antsihànaka.

¹ I am glad to say that our visit was a means of calling attention to the needs of the forest tribes; and that evangelists have been stationed for many years past among these people, who are becoming enlightened and Christianised.

CHAPTER XX

AMONG THE SOUTH-EASTERN PEOPLES

FROM the Hova military post at Ambòhipèno, my companion and I made our way southwards, or rather first to the south-west, intending to visit the congregations at the three or four other important places in this district, as well as some of those in their vicinity. This part of Madagascar is a comparatively level or undulating country, extending for many miles between the forest-covered mountains and highlands to the west, and the ocean to the east, and only about three hundred to four hundred feet above sea-level. The native inhabitants were conquered—often with much cruelty and treachery—by the Hova, about fifty years previous to the date of our visit, but the cruelties of the wars carried on by the armies of Radàma I. and Rànavàlona I. were not forgotten. Over large districts, all the male population whose heads were above the armpits of the soldiers were ruthlessly shot down or speared, and the women and children taken as slaves, so that a large proportion of the slave population of Imèrina were descended from the tribes in these south-eastern districts. Since then, the people quietly submitted to the superior power; but these military posts were still maintained with governors, officers, and a small force of soldiers; and at most of them there was a considerable display of military authority, the gates being guarded, and the drum beaten at regular times every morning and evening. With one notable exception, we were everywhere received with the greatest kindness and respect. Abundant presents of food for us and our men were brought wherever we stopped; every facility was given us to speak to the people, and we were helped in every way to prosecute our journey.

The country between Ambòhipèno and Màmamàina was varied by low hills in all directions, and patches of wood, the traveller's tree appearing in great numbers. The fruit of this beautiful tree was seen very conspicuously, forming three or four

clusters of sheaths, about a dozen in each, much resembling the horns of a short-horned ox. These project from between the leaf-stalks, two in full bloom, and the other two generally dying off, or shedding the seeds, or rather the seed-pods. These are oval in shape, about two inches long, and yellow in colour, something like very large dates. These, when ripe, open and show each pod dividing into three parts, each of which is double, thus containing six rows of seeds about the size of a small bean. But what seems very curious is, that each seed is wrapped in a covering exactly like a small piece of blue silk with scalloped edges. I could not get these, however, without some difficulty from the ants, which swarmed all over trunk, leaf-stalks, and leaves, and resented vigorously any intrusion into their domains.

At Mâhamânina we found old friends in the governor and his wife. The *lâpa* or government house was the largest and finest house I had ever seen in Madagascar, except the chief palace in the capital. It was three storeys high, entirely of timber, with stout verandah posts and very high-pitched roof; and everything here, gateways, guard-houses and stockades, was of the most substantial character, and made of fine massive timbers. After two days' stay we proceeded farther south, and at the village where we encamped for the night we noticed a new style of coiffure among the women. Some of them had their hair done in two rows of little balls, while behind the head there was a piece of hollow wood ornamented with brass-headed nails and fastened into the hair. In this they kept their needles and other small property. Beads also were a good deal worn, and they had the *lôndo* or square mat on the back. At one village the young women wear round the breast a broad band of neatly woven straw, ornamented with a variety of patterns in different colours. It was rather difficult to understand the talk of the people; the nasal *n*, the peculiar intonation, and the pronouns and adverbs being all different from the Hova forms, made their conversation a puzzle to us. Some, if not all the people here, are a Sâkalàva colony from the west of the island.

We came the next day to a very boggy and difficult rice-valley. Hereabouts the people make their *vâlam-parihy*, or low earthen banks between the rice-fields, with a foundation of small stakes stuck in the ground, apparently to hold the earth together, as it seems less tenacious and binding than that in

Imèrina. When a good deal of the earth has been washed away, it may easily be imagined that it is not a pleasant thing walking along these banks. During the afternoon we passed for some time over a slightly hollow tract thickly covered with rounded lumps of dark brown rock resembling slag or scoria, and full of holes like those produced by air-bubbles when the mass was in a state of fusion. These were of all sizes, from a yard or two to an inch in diameter, while the ground was covered with rounded pebbles of the same material, of the size of small beans. This must surely have been the bed of some ancient stream, long since diverted into other channels by subsequent elevation of the surface. But whence was this volcanic substance derived? For many miles westward there seems no broken or rugged surface, nor anything to indicate subterranean disturbance. Probably the great isolated mountain of Ivòhibé, which we have seen for several days far away to the west, is an extinct volcano, like so many hills farther north; and the ancient stream has at some remote period cut through a dyke of lava and brought the rolled and rounded fragments down its bed.

Walking about in the brilliant moonlight after our evening meal, in a short time there was quite a crowd gathered together to watch the extraordinary spectacle of two foreigners walking backwards and forwards for no discoverable earthly purpose. After a little while we stopped and began to talk to them, telling them of the old, but to them perfectly new, story of the glad tidings, and of that "faithful saying" which was worthy of their, and of all men's, "acceptation."

Travelling again towards the shore, we passed for some time through country which was like a beautiful shrubbery, with low trees, amongst which the *vòavòntaka*, with its perfectly globular green or yellow fruit, the size of a large orange, was very plentiful and conspicuous. There was also a tree, the *karàbo*, having enormous pods with seeds like beans, but from two to three inches in diameter. We passed fresh evidence of volcanic action in ancient streams of lava, with sand and dust from some long extinct crater. Stopping at sunset at a village called Mähavèlona, we found it, notwithstanding its promising name ("causing to live"), the filthiest spot we had seen in all our journey, quite worthy of the name given by a friend to a place

he stopped at, of "the well-dunged village." We could find no space where the tent could be pitched, and so began to look for a house. There was one in the centre of the village that looked of fair size, but the difficulty was, how to get to it, for it was surrounded for a considerable distance by a slough of mud and cow-dung that took our men nearly up to their knees. Happily there were a few stout planks lying near, and with these we made a causeway over the bog.

The following day, while waiting in the belt of wood bordering the shore, we had an opportunity of testing the accuracy of accounts given of the water procurable from the traveller's tree, about which, although backed by the authority of Mr Ellis, and an illustration in his "Three Visits to Madagascar," I had always felt rather sceptical, as somewhat of "a traveller's tale." In fact I had never before seen the tree where plenty of good water was not to be had ; but here there was none for several miles except the stagnant, brackish and offensive water of the lagoon. (Even my friend, Baron, says that the tree is always found where good water is procurable.) But we found that on piercing with a spear or a pointed stick the lower part of one of the leaf-stalks, where they all clasp one over the other, a small stream of water spurted out, from which one could drink to the full of good, cool, and sweet water. If one of the outer leaf-stalks was forcibly pulled down, a quantity of water gushed out, so that we afterwards filled a vessel with as much as we needed. On examining a section of one of the stalks, a hollow channel about half-an-inch in diameter is seen running all down the inner side of the stalk from the base of the leaf. The large cool surface of the leaves appears to collect the water condensed from the atmosphere, and this is conducted by the little channel downward to the base. The leaf-stalks are all full of cells and of water, like those of the banana. After three hours' walking along the shore in the heavy sand, with a hot sun overhead, we were grateful to be able to draw from these numberless vegetable springs, and we thanked God for the traveller's tree ; we felt that its name was no misnomer. We afterwards found in a village not far away that small water-pots were placed in a hollow cut at the base of the leaves, so as to collect water for drinking and household use.

After five days' journey from Mâhamânina we reached a



TREE FERNS IN THE FOREST



TRAVELLERS' TREES

In some places they are quite a feature of the landscape

village near Vangàindràno, another of the large Hova posts, and about three hours' ride from the sea. But here we met with a new and unexpected experience, for we were prevented by the governor from going farther, and in fact, all our men made prisoners and detained in the fort for a couple of days, until we had agreed that we would not attempt to travel farther southwards. He alleged that he was acting under orders from the native government to allow no travelling south of the Mānanàra river. Whether this was the truth or not, we never clearly ascertained, nor any reason for such prohibition; but his whole action was in such striking contrast to the courtesy with which we were received everywhere else that it was difficult to believe he was not exceeding his instructions, certainly in the harsh way in which they were carried out. We had been repeatedly assured that there were no difficulties in travelling along the coast and that the country was perfectly tranquil, and that we could easily reach Fort Dauphine in a week. However, there was no help for it; we had to abandon our hope of seeing the congregations and people, as well as the country, to the south, and on 11th July we turned northwards, "homeward bound." On one of the nights when we were thus stopped on our way, we saw what is not at all a common sight—namely, a very well-defined and distinct lunar rainbow. It looked pale and watery, however, quite a ghost of the rainbow produced by sunlight. During many years' residence in Madagascar, I have only seen one on two other occasions.

On the sides of the lagoons and marshes may be found the curious pitcher-plant (*Nepenthes*). It is a shrub, about four feet high, and its jug-shaped pitchers, four or five inches in length, contain abundant water and numerous insects. The pitcher with its cover are most remarkable modifications of the petiole or leaf-stalk; and this plant, with a number of others, reverses the usual order of nature, and instead of forming food for animals, secures animal life, in the shape of insects, for its own nourishment. A French writer has, not inaptly, compared the pitcher of *Nepenthes* to the bowl of a German meerscham pipe; and Mr Scott Elliott says: "I found the pitchers to be usually from a third to half full of the decomposing remains of insects. In almost every pitcher there were live worms, apparently living on the remains. Among the insects I found

thirteen species of beetle, ten species of butterfly or moth, seven species of hemiptera (aphides, water-beetles, etc.) ; four species of hymenoptera (bees, wasps, ants, etc.), of which one was a sand-wasp, nearly an inch long ; twelve species of diptera (mosquitoes, flies, etc.), two grasshoppers, two dragonflies, and one spider." The water contained in the pitchers apparently contains some acid or other solvent, by which the insects are slowly digested by the plant ; and from the above account it will be seen what a great variety of insect life is entrapped, including even the largest and strongest insects.

On one of the afternoons when we were detained near Vangàindràno, hearing a sugar-cane press at work at one end of the village, we went to look at it in operation. Like many others we saw on this coast, it consisted of a long hollowed-out trough, one end being left solid for a foot or two, thus forming a slightly convex surface, with a channel cut on either side for the expressed juice to run into the trough. Over this and across it was a rounded tree trunk, seven or eight feet long, with three short handles fixed into it ; this is turned backwards and forwards over small pieces of cane placed on the convex surface, the juice being expressed by the mere weight of the round trunk. The freshly expressed juice makes a pleasant drink ; after a day or two it begins to ferment, and is then much like fresh cider ; but it rapidly becomes too heady and intoxicating. A good deal of *tòaka* (rum) is made, and is a cause of much evil among the coast tribes ; but the people here appear not to understand the manufacture of sugar. Their still is as rude a contrivance as their press ; an earthen pot to boil the juice, and a piece of iron piping fixed through a vessel of cold water so as to condense the steam which forms the spirit.

The people in this part of the country, who are called Taisàka, all wear mats, as do the Tanàla and the Taimòro. To fasten the mat sack about their waists, they use a girdle of bark cloth. Some of this cloth (called *fànto*) is made by stripping off the bark of certain trees, so that the whole comes off in one piece, forming a kind of long bag, but open at each end. Another kind is made in a sheet of about six feet long by four wide. It is prepared by being hammered for a considerable time with a wooden mallet, the face of which is cut in cross lines. This is chiefly women's work. Very few of the people had any garment

made of woven cloth, indeed they seem to have little, if any, knowledge of spinning or weaving. On the other hand, they are clever in straw-work and in manufacturing mats and baskets.

Their houses are very small, made of a slight framework and filled in with the midrib of the leaves of the traveller's tree in the same way that the *zozòro* (papyrus) is used in Imèrina, and looking almost exactly like *zozòro*. These leaf-stalks, which are called *falàfa*, are fixed together on long fine twigs so as to make a kind of stiff mat, the triangular stems easily fitting in alternately. These mats are the ordinary mattress, and are used in various other ways. One of them forms the door on either side of the house, being shifted to one side or another as required, and is kept from falling by sliding within a pole hung from the framework. The flooring, which is always raised above the ground, is made of the bark of the traveller's tree, pressed flat so as to form a rough kind of boarding; while the thatch of every house is the leaves of the same tree, which forms a neat and fairly durable covering. Here also, as among the other coast tribes which we have seen, the traveller's tree might be called with equal or greater propriety, "the builder's tree." The hearth is at one end of the house, in the centre, with a strong square framework above it, having two or three rows of shelves. The *tràno-àmbo*, or elevated house for storing rice, seems common to every tribe we have visited since leaving the Bétsiléo province. The villages here are arranged in groups of from two to half-a-dozen in a line, and with only a small space between each group.

The rice-fields in this flat swampy district have a very different appearance to those in Imèrina or Bétsiléo; they are like immense pits, in some places dug out to some depth in the sides of the low elevations. The people do not transplant their rice, as do those of the central provinces, but reap it where it has been sown. We continually came across traces of volcanic action; ancient streams of lava, conical-shaped hills and, on the coast, reefs of basalt rock, gradually being broken up by the action of the waves. All this showed that the great groups of extinct volcanoes in the central provinces had their counterpart in these southern regions of the island. Another interesting fact was, that we found unmistakable signs also of

Secondary rocks here on the coast, in stratified sandstone tilted up at a very high angle.

A day and a half's journey from Vangàindràno brought us to another Hova military post, a town called Ankàrana, which is situated on a ridge about four hundred feet above the general level of the surrounding country, forming a striking feature in the landscape. Ascending a slippery and steep road in the red clay, I found myself at one o'clock on the top of the ridge and close to the stockaded *ròva*, or Hova fort, a much larger place than I had expected to see, as hardly anything of the town could be seen from below. Mr Street, being ill with fever, had gone on before, while I brought up the rear. Coming to the gate of the stockade, my men were about to take me in at once, but the people near requested me to stop, as the officers were coming out to escort me in. This I rather unwillingly did, as a very heavy shower came on just then. Presently the rolling of drums announced their approach. First came a file of soldiers, then a number of officers, then the lieutenant-governor in palanquin, and then the governor in ditto, a little active old man in regimental red coat and cocked hat. They all came forward and shook hands, and evidently it was intended that the queen should be saluted and polite speeches made; but the rain pelted down so furiously just then that they thought better of it, and we made our way through the double stockade into the Hova town with its lines of houses, and then into an inner stockade enclosing the government house and flagstaff and several large houses. We took shelter under the raised verandah of one of these, while a dozen unfortunate individuals, soldiers and petty officers, had to stand out in the pouring rain and "present arms," "support arms," etc., and then, of course, came inquiries after the queen and the great people at their capital.

The governor then led me into the temporary *làpa*, a large rough-looking room, where was a table spread with dishes, plates, etc. He apologised for there being no meal ready for us, as our coming was unexpected, but wine and biscuits were brought and we drank the queen's health, and they drank ours, a flourish of music and drums following each toast. This extreme politeness, so soon after the marked discourtesy shown us at Vangàindràno, astonished and amused me not a little. I

was gravely consulted as to whether the royal flag might not be hauled down, as the day was so wet ; I accordingly graciously signified my approval of their doing so. As soon as possible, I intimated that I would like to go and see my friend and companion. The governor leading the way, I was taken to a house at the far end of the enclosure, where I found Mr Street in bed and very unwell. But the house was large and dry, a fire was burning on the hearth, and we were glad to get our wet things dried. Several of our men were also ill with fever, so I had my hands pretty full with dispensing medicine and nursing. Besides this, numerous callers had to be talked with and presents received.

A good part of the following day was occupied in conversation with the native pastors, examining the school, teaching, singing, etc. But soon after four o'clock in the afternoon the sound of music and drumming in the courtyard told us that the time was approaching for the feast they were going to give us, and presently the governor and all his people came to fetch us. My companion was unable to go, but I was led by the hand and had to receive all the honours. In the open central space all the military force of the town, about five and twenty soldiers, was drawn up, and the royal flag was flying. On one side the ladies, the wives and daughters of the officers, were arranged, dressed in their best ; on the other side were row after row of pots with fires under them, where the feast was being cooked. There was a terrible din of drumming and music going on. After a prayer, salutes, speech-making, including a long flourish of our honour, and presentation of another immense heap of provisions, I was again taken by the hand, and led into the government house for the repast. I should add that the governor also gave us ten dollars for *vàtsy* (food by the way), counting them into my hand in English numbers.

The dinner was, I think, the longest, and certainly *was* the noisiest, entertainment at which I have ever assisted. About a score of the officers were at the table, and seven of the ladies. After a long grace from the pastor, dinner was brought in, and consisted of the following courses :—1st, curry ; 2nd, goose ; 3rd, roast pork ; 4th, pigeons and water-fowls ; 5th, chicken cutlets and poached eggs ; 6th, beef sausages ; 7th, boiled tongue ; 8th, sardines ; 9th, pigs' trotters ; 10th, fried bananas ;

11th, pancakes ; 12th, manioc ; 13th, dried bananas ; and last, when I thought everything must have been served, came hunches of roast beef ! All this was finished up with coffee. By taking a constantly diminishing quantity of each dish I managed to appear to do justice to them all. Claret went about very freely, and at length some much stronger liquor ; and the healths of the Queen, " Our friends the two Foreigners," then those of the Prime Minister, Chief Secretary, and Chief Judge, were all drunk twice over, the Governor's coming last ; all followed by musical (and drum) honours. As already remarked, it was the noisiest affair of the kind at which I have ever been present. There was a big drum just outside in the verandah, as well as two small ones, besides clarionets and fiddles, and these were in full play almost all the time. Then the room was filled by a crowd of servants and aides-de-camp, and the shouting of everybody to everybody, from the governor downwards, was deafening. The old gentleman directed everything and everyone, filled up everybody's glass, and, in fact, filled up his own more often than was quite good for him, so that he became a little incoherent in the last toasts he proposed ; so that I was glad when the finishing one arrived, and I could take my leave after nearly two hours' sitting. But I was not to leave quietly ; again I was taken by the hand, the big drum being hammered at in front of us all the way, and, followed by a posse of officers and ladies, was escorted home by the governor. My invalid friend could well have dispensed with the big drum ; however, being a little better, he and I managed to say a few earnest words to them about " the praying " ; after which they took their leave. I had afterwards to pay quite a round of visits to our men who were poorly, some with fever, others lame, with feet hurt with thorns, stumbling, etc.

It was fine on the following morning, and as my companion's fever had left him, although he was still very weak, we determined to get off ; but first, there were more visits to be paid, and more presents to be received. Mr Street left first at half-past nine, but I waited until all the baggage was off, and then went to wish our old friend the governor good-bye. But I was not to get away so easily ; I was again taken into the chief house, the claret was brought out, and the Queen's health and our own drunk with military honours. Then I turned to say

Velòma; but no, the vigorous old gentleman was going to escort me out of town, and his wives were to accompany us. But some time elapsed in seeking bearers for them, during which I had to go to the lieutenant-governor's and drink coffee. On returning to the courtyard I found the governor putting a couple of bottles of claret and another of rum into his palanquin, as well as glasses and cups. Sufficient bearers could not be procured for the ladies, so we wished them good-bye, and set off in the following order:—Soldiers, musicians, with drums, clarionet, and violin; “*ny havantsika ny Vazaha*” (our foreign friend); the lieutenant-governor; the governor; aides-de-camp, soldiers. And so escorted, with the drums, etc., in full play, we marched out of the town. I had supposed that as soon as we were fairly at the foot of the hill the governor would take his leave, but he went on and on for an hour until we came to a rapid stream, the Mânantsimba. Here we halted; the claret was poured out for more health-drinking, with musical honours; and then the whole of the governor's men were ordered to take me safely across the river, which they did. From the opposite bank I bowed and shouted my last adieux, and so parted from one of the jolliest old gentlemen I have ever met with in my travels. It struck me as irresistibly comic that, as soon as we had fairly started on our way from the river bank, the musicians struck up a most melancholy strain. As my men said, the governor appeared to be low-spirited at parting with us.

I must add a word or two more about this “fine old *Malagasy* gentleman, all of the olden time.” It appeared that he had been governor at Ankàrana for more than twenty years, and before then was lieutenant-governor at Mânanjàra. We were somewhat shocked to find that each of the three buxom ladies who accompanied him about was his wife, and further, that he had another as well, whom we did not see. The pastor told us that he had been admonished as to the impropriety of his conduct in this respect, but he had been unable as yet to make up his mind which of them to put away, and which to keep, out of the four. He seemed quite a little king in the district he commanded, and our servants told us that he was a most courageous old fellow, delighted to hear of there being any enemies to be met with anywhere, and going off to fight them

with the greatest alacrity. Yesterday, when the feast was being cooked, he sat in the courtyard, gun in hand, shooting first a fowl, then a pigeon, and then a pig, all of which, in addition to what was already preparing, he ordered to be instantly cooked with the rest. They also say that he is very rich, owning five hundred cattle and two hundred slaves, and that he is always most hospitable to all strangers. Certainly we found him to be so. Besides the abundant kindness he showed us at Ankàrana, he sent with us an escort and guides, twelve soldiers, two officers, and a drummer, besides as many baggage bearers as we required to replace the men who were ill.

We were interested to find that many of our bearers met with relatives in these coast provinces. The mothers of several of them were brought up from these parts as slaves, when children, in Radàma's cruel wars. The most remarkable circumstance was that our cook discovered that one of the governor's wives at Ankàrana was his mother's sister. And at the same place another of our men found that the chief people of the Taisàka village were his mother's brothers.

Our lodging on the evening of the day we left Ankàrana was in another sample of the "well-dunged village," although we procured a tolerably good house in it. While taking lunch in one of the other villages, we noticed the primitive dishes and spoons used by the people. The former consist of the strong tough leaf of the pandanus-tree, which is doubled over at one end so as to retain rice or liquid. The spoons are pieces of the leaf of the traveller's tree, folded up so as easily to carry food to the mouth. This pandanus has a fruit, yellow in colour, and something in shape and size like a pineapple without its tuft of leaves. When dry it is brown in colour, and each hexagonal division when separated from the rest is like a tough wooden peg, and utterly uneatable.

Outside a village called Iàboràno I noticed the first appearance of anything like a funeral memorial we have seen since leaving Bétsiléo. This consisted of four poles placed in a line, the two outer ones higher than the others, and the inner ones pointed in a peculiar fashion. These serve the same purpose as the upright stones called *tsàngam-bàto* in Imèrina. All through the Tanàla country and along this south-eastern coast we

have seen no graves or memorials of the dead. I was told that each village has a large pit in, or on the borders of, the forest, where the dead are thrown and are not covered with earth. The corpses are wrapped in coarse matting made of rush.

CHAPTER XXI

THE SOUTH-EASTERN PEOPLES

ON the Saturday afternoon we reached Ambàhy, a large village not far from the sea, with a *lodoàna* or custom-house. Here a detachment of military awaited our arrival—viz. *four* officers and *two* soldiers, but outside and inside the stockade rather more than the usual amount of tedious ceremony was gone through, which was, however, amusing as well, from the absurd costume of many of the performers.

On the Sunday, as my companion was still unwell, I took the services entirely. The church was in the village on the other side of the water, and in going over to service I had a sail for the first time in a native-made *built boat*. These boats are here called *sàry*, and are about thirty feet long by eight feet beam, and easily carry fifty people. I examined with interest the construction of the craft, for the planks, about eight inches broad, were *tied*, not nailed together, by twisted cord of *anivona* palm fibre, one of the toughest known vegetable substances, the holes being plugged with hard wood. The seat boards came right through the sides, so as to stiffen the whole, for there were no ribs or framework. The seams were caulked with strips of bamboo, loops of which also formed the rowlocks for large oars of European shape. The ends of the boat curved upwards considerably, and from its appearance it seemed likely to stand a heavy sea with perfect safety. These boats are made for going out to the shipping, for no dug-out canoe could live in the great waves constantly rolling along these shores.

From Ambàhy northwards there stretches a coral reef at a mile or two's distance from the beach, a white line of surf constantly breaking over it. Along this part of the coast the vegetation of pandanus is varied by a number of the tall graceful *filào*-trees (*casuarina*), so common south of Tamatave. It was dusk before all the baggage and our men were ferried over a small river, and as I was the last I had a most unpleasant

hour and a half in the dark, floundering about in rice-fields and water, for our guides lost their way, so that I thought we should have to take shelter under some bush for the night. But at last we reached a good-sized village ; two of our men, however, got hopelessly astray and had to lie out all night in the open. In the dark we several times thought we saw a lantern coming to our aid, but it was only the beautiful little fireflies dancing up and down in the bushes, a “ will-o’-the-wisp ” which deceived us again and again. These flies do not give a continuous light, but one which—like some lighthouses—is quenched every second or two, the interval of darkness being longer than the time when the light is visible.¹

We were delayed on our journey one day by having to return and search for a man who had been missing for a day or more. Leaving our stopping-place before six in the morning, I took sixteen men, who were divided into three parties to go in different directions. We did not find him, but discovered where he was, and left him in charge of some Hova officers to be sent on after us. I had two voyages over the Mâtitanana that day ; the morning’s sail was delightful, the water smooth as a mirror, and with a very large canoe and eight or ten paddles we moved rapidly over the glassy surface. My men began and sustained for some time several of their musical and often amusing canoe chants, in which one man keeps up a recitative, usually an improvised strain, often bringing in circumstances recently happening, while the rest chime in with a chorus at regular intervals, a favourite one being, “ *E, misy vâ ?* ” (“ Oh, is there any ? ”). This question refers to various good things they hope to get at the end of the day’s journey, such as plenty of rice, beef, sweet potatoes, etc., these articles of food being mentioned one after another by the leader of the song. A little delicate flattery of their employer, the Englishman they are rowing, is often introduced, and praises of his hoped-for generosity in providing these luxuries for them, something in this style :

E, misy vâ ?	Oh, is there any ?
E, misy ré !	Oh yes, there’s some !
E, ny vorontsiloza, zalàhy, é !	Oh, the turkeys, lads, oh !
E, misy ré !	Oh yes, there’s some !
E, ny gisy matavy, zalàhy, é !	Oh, the plump-looking geese, lads, oh !

E, misy ré !
 E, ny akoho manatody, zalàhy, é !
 E, misy ré !
 E, ny vazaha be vola, zalàhy, é
 E, misy ré !

Oh yes, there's some !
 Oh, the egg-laying fowls, lads, oh !
 Oh yes, there's some !
 Oh, the very rich foreigner, lads, oh !
 Oh yes, here he is !

and so on, *ad libitum*.

In another song sung by men on this voyage, the chorus was, *Mandàny vatsy, Toamasina malaza é!*—*i.e.* "Consumes provisions for the way, famous Tamatave O!"—while the recitative brought in all the different villages on the journey from Tamatave to the capital, ending with Avàra-dròva, the northern entrance to the palace yard. Our return voyage was a rough one; there was a considerable swell, for the sea breeze had set in very strongly, as is generally the case in the afternoon along the east coast; and had I not had an unusually large and good canoe, I dared not have ventured across the broad expanse of water near the mouth of the river.

While waiting for the canoe that afternoon I was delighted to see the profusion of orchids along the shore. I had, of course, often admired these on the trunks and branches of trees on the coast; but, here, the magnificent *Agræcum superbum* was growing by hundreds on the ground, on good-sized bushes, which occurred in scores, the large waxy-white flowers all in full bloom. It was worth a fatiguing journey to see such a wealth of floral beauty. Here I may notice that another fine orchid, the *Angræcum sesquipedale*, is also to be seen in flower in the months of June and July on this eastern coast. It is not so numerous in blooms as the other species, but its large pure white flowers shine out like stars against the dark trunks of the trees on which it grows. As its specific name signifies, its remarkable spur or nectary is nearly a foot and a half long, pointing to an insect with a very long sucking tube in order to reach the honey stored there. There are several other species of *Angræcum* found in Madagascar, but with smaller flowers than the two just named. As Mr Baron remarks, "Whatever else may escape the notice of the traveller, the *A. superbum* forms far too striking an ornament to be passed by unheeded." And I think the same might almost be said of the *sesquipedale*; of this latter Mr Baron says that it generally chooses trees which overhang the rivers or lagoons as its



A MALAGASY ORCHID (*Angraecum Superbum*)

The blooms are pure white, waxlike flowers

habitat. I have, however, noticed it at some distance from water.

Farther north along this coast there is a large proportion of trees of considerable size, in addition to the pandanus and more shrubby vegetation seen farther south. The latter also attain a much greater height in the struggle to get up to the light amongst the crowd of other trees. In one spot for some distance there was no undergrowth, but "a pillared shade" of the slender trunks of the pandanus, while high overhead their graceful crowns of long saw-edged leaves made a canopy impervious to the sun. Among the larger trees one called *atàja* (*Terminalia catappa*) is prominent; in these the branches strike directly at right angles from the trunk and then spread away horizontally for a considerable distance. The leaves are spatula-shaped and from eight to ten inches long, and a large proportion of them are always a ruddy brown or scarlet, giving a blaze of colour. The tree is called also the "Indian almond," and the kernel of the fruit is edible. While waiting for a canoe, we walked two or three hundred yards towards the outlet of a small river, and were startled by a crocodile only a few feet in front of us, rousing himself from his nap in the setting sunshine, and waddling off into the river.

About seventy miles north of the Mâtitànana river we came to an extensive lagoon stretching northward for several miles. This appeared to be the first—from the south—of that remarkable series bordering the shore and extending with but few breaks nearly to Tamatave, a distance of two hundred and sixty miles (see Chapter III.). Along the northern side of this lagoon are masses of lava rock, some of it in enormous blocks.

We found here that we had reached another centre of population, an important settlement of the Taimòro tribe; the principal chief, a very fine tall man, came to see us, and was extremely polite and kind. We were amused to see his daughters, two nice little girls, attended by all the other children of the village, who were going through the peculiar monotonous native singing with clapping of hands; while these two girls moved together slowly backwards and forwards, and with a slow movement of their feet, and a graceful movement of the hands, performed a native dance. They were strikingly different

from the other children in their dress, having scarlet caps, with a long veil behind of coloured print, jackets of figured stuff and a skirt of scarlet or a broad girdle of the same colour. Afterwards they were mounted on the shoulders of two stout girls, who went through the same performance with their feet, while the little girls moved their hands and arms.

At a village where we stayed it was the custom that no bird or animal could be killed for food except by someone belonging to the family of the native king. This agrees with what is stated by Drury and other early writers on Madagascar as to the customs of many tribes in the south-west of the island.

On 22nd and 23rd July, Saturday and Sunday, we had two long and very fatiguing journeys, the more so as our maps were of the vaguest description, and we could get no accurate information as to distances or villages; rice for our bearers was not at all easy to procure, and when crossing rivers, a single canoe for fifty men and a quantity of baggage often delayed us very seriously. On the Saturday morning we met a wheeled vehicle, the first I had ever seen in Madagascar—viz. a cart drawn by yoked oxen; this excited much wonder among our men. We had to cross rivers or wide lagoons five times that day, so that late in the afternoon we still saw no stopping-place. But as we understood that that was a small village two or three hours farther on, and that the road was along the shore, we thought we could not miss it even if it was late. So we went along the sands; the sun set, and it grew dark, but there was no sign of any village; then the path turned inland among the bush, where we went on feeling our way for some time. But at last we got hopelessly adrift in the dense vegetation and total darkness. There was no help for it but to retrace our steps to the shore, which we did, not without great difficulty. It seemed highly probable that we should have to spend the night under the trees, without food, fire, or light, as our baggage had gone on ahead. Continually we mistook the light of the fireflies for a lantern coming to our assistance; but still going on we saw at last a light ahead, steadier and redder than that of the fireflies. Then we lost it, but going on again we at length came up to the embers of a fire lighted on the sand. Opposite was a path leading up to four little huts, where most of our men had arrived, and where we got better accom-



MALAGASY MEN DANCING

This consists of graceful movements of hands, body, and feet. Men and women never dance together

modation than the woods would have afforded, although the huts were mere rough sheds of traveller's tree leaves. It was fortunate for us that we reached them, for heavy rain came directly and continued all night. There was no rice to be bought; so our men had to go supperless to bed, and we had very little to eat ourselves. Some dozen or more of the men slept with us in our hut, as thick as they could lie, and the other places were as full.

The following day, Sunday, was a disappointing one, for we quite thought in the morning that we were only two or three hours' journey, at most, from Māsindrāno, where we hoped to meet with a good congregation. But we had to travel for hour after hour, delayed in crossing the lagoons in a vain search for food, and in other ways, so that it was sunset before we crossed the Mānanjāra river, and after dark before we at last reached the town. However, here we met with the kindest welcome, had good houses put at our disposal, and there was abundance of food for us all.

On the following day we left the seashore, along which, first going southwards and afterwards northwards, we had travelled for so many days. And here I may remark that dolphins are often seen in the Madagascar seas, especially the small species called *Delphinus pas*, which is frequently seen leaping, plunging and swimming with astonishing swiftneſs and in large shoals. These animals love to pursue the flying-fish, and in this chase they display extraordinary dexterity. Two species of whale also frequent the seas round Madagascar, but they are chiefly seen on the western side of the island. The huge form of the cachelot or sperm-whale, with its remarkably square head, looking as if it had been cut off right across, especially when it turns to dive, as I have seen it, seems to have impressed the imagination of the Malagasy, because when an earthquake occurs they say, *Mivādika ny trôzona*—i.e. "The whales are turning over."

After leaving the east coast we sailed up the broad river Mānanjāra, stopping a night at another Hova military post, a large village called Itsiātôsika. Here again we had great kindness shown to us by the most polite and gentlemanly set of Hova officers we had ever met. For the first day and a half our route lay chiefly up the valley of the river, over undulating country; but

during the next two and half days we had to travel to the north-west, through the belt of dense forest covering the lines of mountain which are the successive steps into the bare interior highland. Through this rugged country, travelling was very difficult, and the steep ascents very fatiguing. As we got up a thousand feet, there was line after line of hill and mountain, all covered with forest, as far as the eye could reach, to the north and south and west. Besides the ordinary forest trees, there were great numbers of the graceful palm called *Anivona*, which, in the struggle for light and heat, here grows to a great height. As we have seen in speaking of the old style of timber houses, this palm was made much use of in their construction. There were magnificent and extensive views from the higher ground; and conspicuous for a whole day's journey was a lofty perpendicular cliff of bright red rock, rising sheer up many hundreds of feet from the valley below.

A little before reaching the summit of one ridge we heard a good deal of noise and shouting ahead of us, and supposed that the Tanàla were dragging an unusually large piece of timber. On getting nearer, we found fifty or sixty people, men and women, and a number of men carrying something, which, coming closer to them, we found was a child's coffin, made of a piece of the trunk of a tree hollowed out, and with a rough cover of wood fastened on with bands of a strong creeper. This was being carried with a barbarous kind of chant, but without the slightest sign of mourning on the part of anyone. It was the most heathenish kind of funeral we had ever seen. Among these forest people funerals are called *jàndroritam-pàty* (*lit.* "stretching out of the corpse"), and it seems that the coffin is pulled about first in one direction and then in another by the different parties of those following it; and it is finally thrown into some hollow in the woods. It was a saddening sight.

We found that we had come again among our old friends, the Tanàla, for in their mats and undressed appearance, and their use of bark cloth, the women in the villages were just like those we had seen from Ivòhitròsa downwards.

Our second day in the forest brought us to a height of fourteen hundred and fifty feet above the sea; and, not-

withstanding our fatigue from having to walk continually for several hours, we were charmed again with the luxuriance of the vegetation. The anivona-palms shot up their slender columns, banded with lines of white on dark green to heights of eighty to a hundred feet, and the traveller's trees were as lofty, in the fierce competition for life. The tree-ferns spread out their graceful fronds over the streams; and the *Vaquois pandanus* carried its large clusters of serrated leaves high overhead to get up to the light. In some places the woods were very dense, and there was a green twilight as we passed along the narrow path amongst the crowd of tall trunks. We were struck by the intense silence of the forest; there was no sound of animal life, and no voice of bird, or beast, or insect broke the oppressive stillness. For six hours and a half we hardly saw a house except isolated woodcutters' huts; and we were glad at last to see the sparkling waters of the Mānanjāra in front of us, and to find a village of twenty houses on its banks.

Although in the cold season, which was the time of our journey, the woods were very silent, they are not so at all times of the year, and among the sounds of the forest we must not omit one which, once heard, can never be forgotten—viz. the extremely shrill piercing note of the *Jorèry*, a cicada, which makes the woods ring again with its stridulous reverberations. If it should happen that two or three of these little creatures are giving out their sound together, the jarring, ringing noise becomes almost painful to the ear; and it is difficult to believe that such a loud noise can be produced from the friction of the wing-cases of such a comparatively small insect, for it does not exceed an inch and a half in length.

On rainy nights a stridulous sound, but far less loud than that produced by the *jorèry*, is heard in and near the forest, and is produced by a large species of earthworm called *Kānkandorōka*. It somewhat resembles the noise of a rattle, and is far from unpleasant to the ear.

Yet it would be a mistake to suppose that these comparatively silent woods are destitute of animal life, and the stillness is largely attributable to the peculiar character of the Madagascar fauna. Many of the lemurs are nocturnal animals and are therefore not seen or heard in the daytime. Then again,

the twenty-four species of centetidæ are burrowing animals, and so do not often appear in the open. And it is much the same with the sixteen species of rats and mice, which live in the woods and on their borders. In confirmation of the above remarks as to the animal life of the forest, it may be stated that in the latter part of the year 1894, and the beginning of 1895, Dr Forsyth Major, the eminent naturalist and palæontologist, lived for several months collecting in the woods not very far from the route we followed about eighteen years previously; and his specimens of recent mammals amounted to no fewer than sixteen hundred specimens, which added *twenty species* to those previously known. These were chiefly in the tenrecs and the rats, but also included a new species of lemur. Some of these forms were exceptionally interesting, one being aquatic and web-footed; and others showed transitions from a hairy to a spiny condition in closely allied animals, suggesting that the prickly state had been gradually attained for purposes of defence. Several of the centetidæ, of the genus *Oryzorictes*, feed largely on rice, as their generic name denotes, and do much damage to the crops. This is equally true of the indigenous rats and mice. We have seen how the forest and coast Malagasy protect their rice stores by elevated houses, with special precautions against these little marauders.

It should be added that Dr Major's unprecedentedly large collections would probably have been larger still but for the disturbed state of the country at that time. It was during the early months of the French invasion and subsequent conquest of Madagascar, when the feeling against all Europeans was very strong; so that again and again Dr Major was in considerable danger of his life. Besides adding so largely to our knowledge of the living fauna of the island, he made large collections of the sub-fossil fauna, in collections of the remains of the extinct æpyornis, hippopotami, tortoises, crocodiles, and other animals, finding bones of several of the smaller mammals which he afterwards discovered to be still living.

With regard to the silence of the wood just spoken of, and the apparent dearth of animal life, it must be remembered that, in addition to the character of the mammalian fauna above mentioned, our journey was made in the cold season, when all life is much less in evidence. As we have seen in the chapters



A WOMAN OF THE ANTANKARANA TRIBE
N.W. MADAGASCAR

She is in full gala costume



WOMAN OF ANTANOSY TRIBE, S.E. MADAGASCAR

She is got up in all her finery

(VIII. and IX.) speaking of the forest, it is by no means destitute of bird life during the warm months of the year. And yet I have never been able satisfactorily to account for the *comparative* fewness of birds in Madagascar, notwithstanding the number of species. It can hardly be from want of appropriate food, for the great variety of trees and shrubs must surely supply sufficient in the way of fruits and berries and seeds, to say nothing of caterpillars, and insects in various stages of development. My friend, Mr Cory, an enthusiastic naturalist and sportsman, wrote to me : " I think the want of bird life in Madagascar is very marked when compared with England, and I was much struck with this on my first arrival. I have been in the forest at all times of the year ; and although there *are* a good many birds in summer, yet if you try bird's-nesting here, you will soon find out how few and far between the nests are." I have sometimes thought that these facts may be partly explained by the rather large proportion of rapacious birds in Madagascar to the general air-fauna—twenty-two, as compared with two hundred and ten species known to inhabit the island ; for, leaving out the twenty-eight species of oceanic birds, we have nearly a seventh of the birds belonging to rapacious kinds, a proportion which would be still greater if we reckon, as we might well do, several of the eight species of shrikes as rapacious. As we shall see in the next chapter, there appear to be a far larger number of birds on the western side of the island than are found in the eastern forests.

With regard to the paucity of insect life in the forest, I think it has been clearly shown by eminent naturalists like Dr Wallace and the late Mr Bates, that *dense* wood is not favourable to such life ; but that in open spaces in the forest, where sunshine can penetrate, and where there is also water, there is where you may hope to find butterflies, moths, and various handsome flies, bees and wasps ; while patches of cleared forest and felled trees are the most favourable hunting-grounds for the numerous species of beetle and also of ants. In travelling from the east coast to Imèrina seventeen years later than this journey, on a route about eighty miles north of that described in this chapter, we found numerous butterflies, a dozen species at least, in some localities ; and the voice of birds was heard all along the road, the noisy call of the *Kankàfotra* cuckoo, *kow-kow, kow-kow*,

constantly repeated; the mellow flute-like call of another cuckoo, the *Toldho*, whose notes we heard all the way from Mâhanôro; the chirp and whistle of the *Railôvy*, or king-crow, as well as the incessant twitter of many smaller birds. Then came frequently the wailing notes of the lemurs high up among the trees. This, however, was in November, when the hot season was advancing.

In our walks in the forest from the Ankèramadinika Sanatorium (Chapters VIII. and IX.), we saw, it will be remembered, many cases of protective colouring. As we are again in the eastern forests, the following instances may also be noted. There is found in these woods a curious walking-stick mantis, about eight inches long and a quarter of an inch thick. It is exactly the colour of a dried branchlet or twig, with joints distinctly articulated like the nodes of many plants. The tail (if the end of the creature may be thus called) is rather more than an inch long, and is a hollow, canoe-shaped trough, somewhat resembling part of the bark torn off a twig. The legs are alate and spiny. At about two inches from the head are the wings and wing-sheaths, the latter being somewhat like obovate stipules about half-an-inch long, and the former marked with black and yellow and about an inch and a half long. When the wings are closed, it would take a very keen eye to discover the creature, as the part of the wing when closed is of the same colour as the rest of the body. The legs can be brought together lengthwise in front, and so appear to form a continuous part of the twig, especially as the femurs are hollowed out to form a socket for the head.

Another singular creature, a kind of springtail, known as *Tsikòndry*, is found on the branches of certain trees. The tail, which is about half-an-inch long—a little longer than the body of the insect—is a remarkable and curious appendage. This tail consists of a tuft of white threads, somewhat divided and fluffy at the tip, and which, at the pleasure of the insect, can be raised or lowered or spread out, the threads radiating in a circle from the root. This tail is so exactly like a lichen in appearance as thoroughly to deceive the eye. Unless a branch on which a number of these tsikòndry are seated is accidentally shaken, causing them to spring off, they would be passed by as lichens. The leap or spring is effected by a jerk of the tail.

I have already pointed out somewhere in this book that Madagascar is a kind of museum of several forms of animal life found nowhere else in the world ; for among mammals there are some of the lemuridæ, especially the aye-aye ; also some of the centetidæ ; among the insects, the uranid butterfly ; while there are several birds, which are isolated, having no near relation, so that new genera, and even new families, have had to be formed for their classification. Among these latter, and inhabiting the eastern forests, is Prevost's broadbill (*Euryceros prevosti*). The zoological affinities of this remarkable bird were for long a puzzle to ornithologists ; but it is so different from the wood-swallows, starlings and shrikes, which groups are nearest to it, that the French naturalists have formed a special family (*Eurycerotidæ*) for this solitary genus and species. This bird is remarkable for a beak formed like a very capacious helmet, strongly compressed and swelled towards the base, which advances to just as far as the eyes ; and its very convex edge is terminated by a sharp hook. This extraordinary form of the beak is seen best in the skeleton, in which the beak is seen to be considerably larger than the skull. The bird is as large as a starling, velvety black in colour, with a saddle-shaped patch of light brown on the back. The large beak is steely blue in colour, and pearly, like the inside of an oyster shell. Such specialised birds—as well as the other peculiar forms of life—speak of high antiquity and of the long isolation of their habitat from continental influences.

Four or five days of hard travelling brought us to Ambòhimànga, *an-àla*, so called to distinguish it from the old Hova capital of the same name, north of Antanànarivo. As on many previous occasions, we had long delays in crossing rivers, from the fewness and smallness of the canoes available. We were detained for three hours crossing the Mānanjàra, which, although so far from the sea, was still a wide river, with a powerful current and full of rapids and rocks. We had time to notice and examine carefully a graceful plant which covered the stones in the water ; this looked like a fern—but is not one—from one to two feet long and with very thick and fleshy stem and fronds. On examining one of these, I found it to be the home of a variety of minute animals ; some of them caterpillars, which were burrowing into the stalk ; others, small

green creatures like caddis-worms, but with a transparent shell ; others, minute leeches ; others like the fresh-water hydra ; with several other kinds, all finding house and provision on one frond in the rushing waters.

This "forest Ambòhimànga" was the home of Ihòvana, the Tanàla chieftainess of the tribe of the surrounding district, who, with her husband, was most kind and friendly, and I believe a sincere Christian. She was a remarkably stout old lady, getting grey, and a woman of considerable ability and force of character. On special occasions, when the Malagasy nobles and tributary chiefs were summoned up to the capital, Ihòvana would appear in the public assembly, and with *làmba* girded round her and spear in hand, would give assurances of loyalty and obedience to Queen Rànavàlona, and say "she was not a woman, but a man," and would fight, if need be, at the head of her people in defence of their sovereign.

The situation of this place is exceedingly pleasant, on a hill about two hundred feet above the river flowing to the east and north. Around it are hills covered with bamboo, while to the lines of hill, the edges of the upper plateau are dark with forest. Here we and our bearers were glad to rest for a couple of days, including a Sunday, during which we were glad to find that these northern Tanàla, through Christian teaching and Ihòvana's influence, had made wonderful advances compared with those farther south. There was a congregation of about three hundred, a school of about as many children, and nine village congregations connected with the central church here.

On the Monday morning, on leaving Ambòhimànga, we had to cross the river at the foot of the hill, and this made the *thirtieth* time we had to be ferried across a river with all our men and property, and glad we were that it was the last. A description of our water conveyances would include bamboo rafts, canoes great and small, especially the latter, canoes with one end rotted away or broken off, and stuffed with clay, and craft so small that they seemed rather fitted for children's playthings than for business. The forest became thinner as we travelled to the north-west, and this was due to the custom of the Tanàla, who cut down the woods and sow the rice in the ashes of the trees which have been burnt ; for the people do not plant

much in one place, but remove their village to another spot after getting a crop or two. This morning we lost the traveller's tree, which does not grow at heights much above two thousand feet above the sea ; and in the afternoon we also lost sight of the graceful bamboo.

The following morning brought us to steep ascents of nine hundred and fifty feet, of four hundred and twenty, and then of six hundred feet successively, the last bringing us to Ivòhi-tràmbo (lofty town), well named, for it has a most elevated situation and higher than a good deal of the interior table-land to the west. I had noticed all the previous afternoon that on the very summit of the highest ground to the north was a lofty cone of rock. Perched upon this like an eagle's nest was part of the village, the rest of the houses being a hundred and forty feet lower. The summit was forty-seven hundred and fifty feet above the sea ; we were now on the high land of the interior and had come up twenty-four hundred and fifty feet since we breakfasted. As may be supposed, the view was most extensive ; the plains of North Bétasiléo were not far distant, and soon we came to the long bare rolling downs of the central provinces. Uninteresting as these generally appear after four or five months without rain, they looked home-like, and the keen air seemed bracing and invigorating. We began to see rice-fields again and the scattered round *vàla* of the Bétasiléo. We had got into the country of a different tribe of people, with different houses, speech and customs. At the village where we stopped for the night was a good timber house, with elaborately carved central pillars, and we began to see again the carved memorial posts, which had so much interested us on our journey south.

We noticed again the peculiar tombs of the Bétasiléo ; these, which consist of a large square of stones, are not, as in Imèrina, the real burial-places ; for the actual tomb is often twenty feet below the ground, a stone chamber, to which access is gained by a long inclined passage opening out at a distance of eighty or a hundred feet from the tomb.

And now, as we reached the oft-trodden route between Antanànarivo and Fianàrantsòà, this record may come to a close. We arrived safely at the capital on 5th August, having been away nearly eleven weeks, and having travelled by

palanquin, on foot, and in canoes, more than nine hundred miles.

¹ These fireflies are not seen in the interior except in two or three localities, where portions of the original forest still cover the mountains on which old towns were built. I have seen them at Vòhilèna, a hill about fifteen hundred feet high, near the valley of the Mānanàra river, in North Imèrina.

CHAPTER XXII

TO SÀKALÀVA LAND AND THE NORTH-WEST

AS the contents of former chapters in this book show, I was able on various occasions during the first few years of residence in Madagascar to make journeys in different directions : from the east coast to the interior ; from Imèrina to Antsihànaka ; from Imèrina again to Bétsiléô and from thence to the south-east, visiting the Tanàla, the Taimòro, and other tribes in that part of the island, not to mention shorter journeys in the central province itself, to Itàsy and other places. But the north-west of the country and the districts occupied by the Sàkalàva people were still unknown to me, so I was glad when in 1877 there came the opportunity of traversing this portion of the great island.

For a long time past Tamatave had been—as it still is—the most frequented port of Madagascar, but the western ports, from their proximity to South Africa, were sure to increase in importance. Not very long before the above-mentioned date, the British India Steam Navigation Company had begun a service of steamers from Aden to Mozambique, touching at Mojangà, on the north-west coast, both on the outward and the return journeys. This appeared to give Europeans living here a good opportunity of reaching England, avoiding the unpleasant experience of the “bullocker” (see Chapter II.), between Tamatave and Port Louis, and taking a mail steamer direct from Madagascar. As we were leaving this country for Europe in September 1877, we determined to take this new route, which, although a little longer than that by Tamatave, was far less difficult, besides being partly by canoes, and the last day or two by a dhow, thus giving a pleasant variety to the journey.

Our party consisted of seven, including my wife and self and three children—Willie, aged six ; May, aged three, and a baby girl of ten months—Frank Briggs, about the same age as our boy, whom we were taking home (his father joined us a day or

two later), and my former fellow-traveller, Mr Louis Street. I ought also to include a Mozambique nurse, one of those African slaves recently set free, in accordance with an agreement made between the English and the Malagasy governments.

We left Antanànarivo on Thursday afternoon, 13th September, a large number of our missionary friends accompanying us for a distance out of the city, in fact as far as the banks of the Ikòpa, along which our route lay for several miles. Here one could not but be again impressed with the importance of these river banks in preserving the rice-fields from being flooded, and by the good work done by the old kings of Imèrina in embanking the river and thus turning marsh and bog into fruitful fields. Stopping at the L.M.S. mission station of Ambòhidratrimo for the first night of our journey, we reached the station of Fihàonana in Vònizòngo on the second day, putting up at the manse, although the minister (Rev. T. T. Matthews) and his family were away from home. A short half-day's ride brought us to a third mission station, that at Fierènana, where we had a Sunday's rest before setting out on the unknown and principal portion of our journey. We stayed in the house which, a year or two before then, I had marked out for our friends, and recalled how I had taught Mrs Stribling to lay bricks, to bond together the corners of the walls, to manage the chimney breasts, etc., so that she became quite proficient and was able to teach the native workmen bricklaying, which was then to them an unknown art.

On Monday morning we fairly started on our journey away from mission stations and Europeans. Two hours' ride brought us to a large market where hundreds of people were assembled. We were set down and, before we knew what our men were about, were left almost without a bearer, it being too great a temptation for our fellows not to go into the thick of a market ; and it was some little time before we could get hold of them to carry us into the village near the place. All this day's journey was up a long wide valley enclosed by lines of hills, which gradually approached as we proceeded ; and our evening halt was in a village covered with a layer of finely powdered cow-dung, although the village chapel, our usual inn on such journeys, provided a fairly comfortable resting-place for the night.

Outside this village the following morning we passed a shoe—

or rather sandal—market, with scores of pairs of rough bullock-hide sandals for sale. I noticed also that everyone we passed carried a pair fastened to his or her burdens. Although we had to go up and, of course, down again, a long ascent, the route was less difficult and fatiguing than are those we often traversed in Imèrina, and far less so than the roads to the eastern coast through the forest. The increasing temperature told us that we were getting to a lower level ; indeed all the western side of Madagascar is hotter than the eastern side, as it is deprived of the cool south-east trade-wind from the Indian Ocean. At the village where we stopped for the night, all the dwelling-houses were made of the gigantic bamboo-like grass called *bàraràta*, although the school church which served us for a lodging was of clay. The place had a double entrance gateway, one of them being a low narrow tunnel ; and like most of these villages had a great quantity of cattle brought into it, for security every evening. In consequence, the whole place was covered with a foot or two of manure ; and it was here that our friend, Mr Grainge, stopping for the night the previous year, had an experience which I will give in his own words.

“ On entering,” he says, “ we raised a considerable amount of dust and general astonishment ; for wishing to pitch our tent inside the village, we set a few of our men to sweep away the filth from the cleanest spot we could select. You may guess the result. I first tried to get to the windward of the horrible cloud, but not being able to find that desirable quarter, as there happened to be no wind at the time, I sent a man to fetch water and then ran away until the atmosphere cleared. I had better have stopped, for, running through the first hole in the entrenchment of the village, I heard a cry of ‘ *Omby ô !* ’ (‘ The cattle ! ’), and saw the head of an ox, closely followed by his tail, coming through the gap. As the people evidently expected to see me run, I stood my ground with true British pig-headedness and waited in the narrow ditch for the big beast to pass ; but this one was closely followed by another, and that by a third—the whole of the herds were coming in for the night, and the fosse was soon as full of oxen as of dust. There was no escape ; grunting, puffing, blowing, and bellowing, in they came, and with nothing but bare

hands to smack them, I was hustled and jostled, bumped and butted, pushed and driven about, until, after three-quarters of an hour, I came out in company with the last calf, choked with dust, streaming with perspiration, and inwardly vowing that the very next time I heard the cry of '*Omby ô!*' I would run for it, however undignified it might appear."

As we were walking about just before sunset, they brought us a chameleon, here called *taròndro* (*Dicranosaura bifurca*), about nine inches long and as much more in length of tail; it was dark brownish-grey in colour, with a white line along the sides, and the head and back serrated like a saw. The nose of the male has two compressed long horns covered with large scales. As we have already seen, Madagascar contains a considerable number of these reptiles, especially of species with remarkable processes on the head.

After arranging for the night, we congratulated ourselves on our comfortable lodgings, but there was a drawback in the number of openings to the outer air, two doorways and three windows, but all destitute of doors or shutters. Mats, rugs, waterproof sheeting and pillows were, however, fixed up; but soon after the wind rose until it blew quite a gale; it was like being in a ship at sea, and it blew so violently as to tear away the coverings from the nails. For an hour or two paterfamilias' chief occupation was to go round the place and fix nail after nail, until I think at least a hundred long tin tacks, as well as a number of two-inch nails, had been driven in, besides propping up palanquins against the openings. Often it came in such tremendous gusts that I feared everything would be torn away, and lay for some time apprehensive of what might happen next. However, it moderated towards morning, and, happily, there were no mosquitoes.

We had not got far on our way the following day before making acquaintance with the *mòkafòhy*, an insect about half the size of a housefly, but with wings less divergent. They have a large proboscis and give a distinct prick, sometimes drawing blood, and with after-irritating effects like mosquito bites. They are more sluggish than mosquitoes and so can be more easily killed, and with a small whisk of leaves it is not very difficult to ward them off. The road was still along a

valley with precipitous hills on our left, and perpendicular faces of rock. All along were clumps of adàbo-trees, making the scenery much like an English park. We noticed a large number of earthen mounds, often two and a half feet high; these were the nests of a large ant, which, like those we met on the eastern side of the island, is said to kill a serpent which makes its home in the lower part of the ant-hill. The native travellers often use these mounds as a fireplace for cooking their rice, by knocking off the top, scooping out the centre, and making a hole near the bottom for draught.

The route continued to be very easy travelling, with gentle ascents and one long one, following generally river valleys; and in the afternoon along a river bank for some distance, with pretty scenery of pandanus, adàbo, dracæna and other trees growing in clumps. This last-named tree, called *hàsina* by the Malagasy, is believed to be a favourite with the Vazimba, the supposed aboriginal inhabitants of the island, and was consequently planted where their graves are and where their spirits are thought to dwell in order to secure their good will. The leaves, which are sword-shaped, grow in large clusters, so that the tree makes a beautiful variety amongst other foliage.

We stopped on Wednesday night at a large village called Màngasoàvina, and the next morning passed along the eastern base of Andriba, a lofty and very peculiarly shaped mountain, which had been prominent before us during the preceding day. It appeared to have a large flat top, and in outline resembled the stump of an immense tree left in the earth, its northern face being a stupendous perpendicular mass of rock. (Here I may remark, in parenthesis, that this Andriba was expected, in the French war of 1895, to have presented the most formidable obstacle to the advance of an invading force and, in the hands of European troops, would certainly have done so.) In the afternoon we entered on the part called in Malagasy, *èfitra*, or desert, but which simply means an uninhabited region, and seemed to promise to be the most pleasant part of the whole route. A long deep gorge which we entered was beautiful with luxuriant vegetation, and in one of the lateral valleys I soon perceived the traveller's tree, a sure sign that we were now from two thousand to three thousand feet lower than Imèrina. Every hollow was filled with trees; the hills became lower, and

the vegetation more distinctly tropical, with graceful palms and other trees common on the eastern coast ; as well as species of ficus, ròtra (*Eugenia sp.*), hibiscus, tamarind and *rofia* palms ; and the mango, escaped from cultivation, often attains the dimensions of a very large tree.

Early on Thursday afternoon we came down to a river, called Màrokalòy, where our bearers wished us to encamp, but we feared both mosquitoes and consequent malaria in such a situation, and ascended a low hill about a hundred and fifty feet above the river. Here we pitched our tents, and after arranging for the night sat down to our evening meal round a mat in the bright moonlight. It was a very picturesque scene : the brilliant moon and the four chief planets shining resplendently ; our group of men near the tents lighted up by the ruddy glare of the cooking fires ; while down below, the greater body of our men had encamped and had a score or two of fires blazing under the dark shade of fine large trees. The night was so warm that there was no inconvenience sitting out of doors, while in the tents it soon grew so hot that we were glad to keep out of them as long as possible. But what surprised us most was the almost entire absence of mosquitoes ; for there was no garden in Imèrina where one could sit for five minutes at such an hour without being soon informed of the presence of these tiny pests. It must, however, be added that for an hour or two before sunset, and for a little after it also, the *mòkafohy* were extremely numerous and annoying. They persecuted us incessantly while encamping, but happily, unlike their namesakes,¹ they retire at dark. By a merciful dispensation of providence they do not bite at night. After our *al fresco* meal, Mr Street and I descended to the river and enjoyed a delicious bathe.

The following morning we were up early, but the *mòkafohy* were up before us and made it a misery to do anything immediately we emerged from the tent. Getting breakfast was therefore disposed of in a very short space of time, for mouth, nostrils, and eyes got full of these detestable little flies ; one could not eat, and we hurried the children into their palanquins and got off as fast as was possible. The name of this pretty valley (Màrokalòy = "Many *alòy* ") ought to have warned us, as *alòy* is the proper name of the insect, and this place seems to be their headquarters. The scenery and the route continued to

be as pleasant and as easy as before ; every hollow was filled with vegetation of a tropical character, and streams of bright water crossed our path every few hundred yards.

Bird life seems much more abundant on this western side of the island than on the east. Black parrots exist in great numbers and may be heard screeching all the day long. But perhaps the birds which are more numerous still are the small green and white parakeet (*Sàrivàzo*), which fly about from tree to tree in large flocks, all ceaselessly chirping during their rapid flight. My friend, Mr Baron, says : " A flock of them settling on a bare tree gives it the appearance of being covered with foliage. On one or two occasions what we thought were the leaves of trees suddenly disappeared, leaving the branches entirely bare. The 'leaves' turned out to be parakeets." Guinea-fowl, in flocks of six to a dozen, are also abundant. The handsome long-tailed green *Tsikirioka* (the Madagascar bee-eater) is found here, and builds its nest in holes in sand-banks ; some of these run in a horizontal direction for above a yard. A very pretty hoopoe (*Tàkodàra*) may occasionally be seen, a bird which is extremely active and graceful in its movements. It gives forth five or six very weird notes, as it sits on a tree during the night. A species of sand-grouse, called *Gàdragàdraka*, a bird of a beautiful fawn-colour, much like a pigeon in general appearance, may often be heard. Like many other native bird names, this name is very expressive of its chuckling. Many of the birds found in the central parts of the island exist also here, while there are also others peculiar to this western region.

Part of our fifth and the whole of our sixth and last day's land journey was taken at no great distance from the Ikòpa river ; and I began to wonder where the western forest-belt was ; for, as we have seen, we had passed through no such masses of dense forest as must be crossed anywhere on the eastern side of the island when one comes up to the interior of Madagascar. The fact seems to be that there is no such continuous wooded region on the western side. There is, in many places, a considerable amount of country covered with forest, but these are not connected, and a great deal of the surface has scattered clumps of trees. In the same way also, there are nothing like the difficult ascents and deep gorges to be crossed on this route such as are described in Chapters IV. and V. The

descent to the level western plains is gradual ; so that a railway to the north-west ports, along the valleys of the Ikòpa and Bétsibòka rivers, would, although longer, present very much less engineering difficulty than that from Tamatave to the capital.

On Saturday morning we came to the bank of the Ikòpa, which river is at some points half-a-mile or more wide, but then at its lowest level, being apparently very shallow, but so interrupted everywhere with shelves of rock that it would be difficult for even a small canoe to make its way far. There were numerous islands, covered with bamboo, bàrarata, *rofia*-palms and other vegetation. From a low hill we had a view over an immense expanse of flat country on the western side of the river. Only here and there was the level broken by a line of hills of small elevation. After leaving the Ikòpa we found ourselves in a very different kind of country from any we had yet passed through, a succession of low hills or mamelons of dry sandy gravel, with hardly any vegetation, and looking as if no rain had fallen upon it for years. In the afternoon I noticed that a large number of granite boulders were strewn over the country, and could hardly doubt that these, from their rounded forms, but especially from the absence, as far as I could see, of any such rock *in situ*, must by some means or other have been transported from the granitic region of the interior far to the eastward. Must this not have been glacier or iceberg action ? Although it is difficult to understand such agency in the tropics.

Ten years after making the journey, my friend, Mr Baron, in travelling across the island towards the north-west coast, but about a hundred and twenty miles farther north, came across isolated rocks, which were quite different in composition from anything near them. Of these he said : " I could think of no agent to account for their occurrence but that of glacial action. They seemed to me to be perched blocks, as there was no hill near from which they could have fallen, nor any rock of the kind *in situ*." I was interested to find that an expert in Madagascar geology like Mr Baron had come to the same conclusion as myself with regard to these granite boulders.

Early in the afternoon we arrived at Mèvatanàna, the most important place in this part of the country, with about a hun-

dred houses ; it had, however, been quite recently burnt down, but was in process of rebuilding. The houses seemed rather larger than those in Imèrina, made of round pole framework, filled in with *bàraràta* stems, the roofs of *rofia*-palm leaf-stalks and thatched with grass. We secured a new house, not quite finished ; and as this was very like a large birdcage, besides having no doors in the three doorways, we put up the tent on one side, piled up our heavy luggage against another of the doorways, and hung a rug over the third, so as to make ourselves less of a public spectacle.

We were glad of the Sunday's rest after our week of continuous travelling, and that we had *not* "to shift our moving tent" that morning, but could let beds and baggage, boxes and bottles, and pots and pans rest in peace. We had large and attentive congregations in the native church morning and afternoon, Mr Briggs and I taking the services. Our dwelling, although perfect as regards ventilation, was certainly not cool, and we all were suffering somewhat from the mosquito bites on the journey. We were as much stared at by the "natives" as if we had been a kind of wild animal, a wondering, if not admiring, crowd unpleasantly blocking up the one doorway left open—in fact, we formed an apparently popular exhibition, open, Sundays not excepted, for a limited period only.

We were astir very early on the Monday morning, for there was a large amount of work to be got through before we could start on our canoe voyage. We got away from the town before seven, and half-an-hour's ride brought us down to the river, where we found six large canoes, four of which were being loaded with our luggage. When everything had been arranged, we had to pay all our men, only about ten going through with us to Mojangà ; and a few others had to be engaged in addition to row the canoes and help in various ways. About nine o'clock we got away and began our four days' voyage down the Ikòpa. It was a pleasant change from the jolting of the palanquin to the smooth gliding of the canoe. These vessels were about forty feet long ; and the one in which we went was three feet six inches beam, and two feet six inches deep, and had three paddlers, besides one at the stern to steer ; as we were going down with the current, more men were not necessary. Two of the palanquins with their hoods were placed

in our canoe, for wife, nurse and little girls, while the little boys, in their palanquin, went in another one with Mr Street and Mr Briggs.

The shores of the river are exceedingly pretty, although there was nothing grand or striking. They are flat, but beautifully wooded, the great *bàraràta* grass, with its light grey feathery head of flowers, giving quite a character to the scenery. Islands are numerous, some being mere sand-banks, but many covered with trees and bush. We soon made acquaintance with the crocodiles, for there was one basking in the sunshine on a sand-bank just opposite our starting-place. We saw a good many of them during the day, although not as many as other travellers have observed, perhaps from twenty to thirty, and some of them quite near enough to be seen very distinctly. Most of them were light grey in colour, but others slaty, and others again spotted with black; they varied in length from seven or eight to fourteen or fifteen feet. The head is small, and the back and tail serrated like a great pit-saw. They were generally lying with the jaws wide open, and sometimes were near enough to be splashed by the paddles as we passed them. The heat on the river was much less than when travelling on the land, or at Mévatanàna; a delightful breeze blew against us all day, and we enjoyed the change immensely.

The banks of the river, which was from half to three-quarters of a mile wide, were only a few feet above the water, and from them flew numbers of birds. Among these were many with which we were familiar in the interior—the pure white lesser egret, varieties of heron, purple kingfishers, wild ducks and wild geese, and many others. The *Railòvy* or fork-tailed shrike is one of the most widely distributed birds of the island, and is very active and an excellent singer. Perched on a dead branch, it keeps up a constant noise, its strong voice giving forth several notes, which very much resemble that of an organ. In the spots frequented by a large number of these shrikes, each one reserves to itself a hunting-ground, in which according to M. Pollen, he tolerates the presence of no other birds, even of his own kind, not excepting those stronger than himself. It is dark bluish-green in colour, with a long tail, forked at the extremity. These western woods are fairly full of singing birds, especially in the hot season, which was coming on at the

time of our journey. Among these are three species of fly-catcher, one of which is called the "changeable," from the remarkable changes of colour it undergoes according to its age and sex. The female bird is entirely of reddish-brown, except the cap and nape, which are dark green. The young male has during the first month the same livery as the female, but its plumage soon changes to a beautiful maroon red; then very soon the two middle tail feathers become greatly lengthened, the quills being black with a white fringe; the wing coverts become partly black and partly white; and the feathers of the head change to dark green, with brilliant metallic reflections. At the breeding-time the back and throat take the same tints as the head, and the belly and breast become white.

We stopped for lunch at a low rising ground, a few feet above the water, at a grove of *Madïro* or tamarind-trees, and under one of these we spread our meal. It was a magnificent tree, shapely and rounded in outline like a great oak or chestnut, the branches spreading over a circle of a hundred feet in diameter and touching the ground. The foliage was then rather thin, the leaves being minute, like those of a mimosa, and the ground was strewn with them, as well as with the pods of the fruit. Most of these were dry and worthless, but we got many fresh enough to eat, and their acid dark red pulp was very refreshing. Mr Baron believes the tamarind-tree to be truly indigenous to Madagascar, but only in the western region, which he thinks forms its original home. The seeds were, and probably still are, employed in the *sikidy*, or divination; and a decoction from the leaves as a medicine.

About an hour after leaving our stopping-place we came to the junction with the Betsibòka, the latter being strongly coloured with red clay from North Imèrina. What impressed us most this afternoon was the total absence of population on the banks of this large river, and it appeared strange that immense tracts of such apparently fertile country should be uninhabited; it was different from the crowded villages along the Mâtitanana and Mānanàra and other rivers in South-east Madagascar. In the afternoon the beautiful fan-palm became very plentiful, growing in extensive groves and mingled with the other trees. Stopping for the night by a sand-bank, we made the canoe fast to a stake and proceeded to put up the tents.

Although dry and pleasant for a floor, the sand had the disadvantage of giving bad holding-ground for the tent-pegs, and, had not the fresh breeze died away at sunset, a very slight gust would have brought down the whole concern over our heads.

We might congratulate ourselves in not coming across, in short rambles among the trees, a tree which caused no small discomfort to some of our missionary friends in this very locality. Mr Montgomery thus describes his experiences. He says :

“ Walking under some trees and pushing aside the reeds and grass, I was startled, in a moment, by a sudden tingling and pricking sensation over the back of my hands and fingers, for never had come the like to me, in Madagascar or elsewhere. I stopped in sudden surprise, for the pain was severe, and I had touched nothing except the grass. But in another moment the pain increased, the tingling burning sensation seemed extending rapidly up my wrists, and I could see nothing to cause it. But as I lowered my head to look, pain, scalding pain, shot into my ears and neck, growing worse, too, every instant. Dazed and bewildered, I stood a few seconds in helplessness, for I could neither see nor guess at the cause of the terrible distress. Then I got back to my company with agony writ plain enough on every line of my face.

“ The men started up when they saw me, some of them crying out, ‘ You have been stung by the agy.’ Some of them led me to a seat, others rushed for water from the river, and two or three brought sand heaped up in their hands. Then they chafed me with the sand and water to take out the stinging hairs, which they knew caused the mischief. As they rubbed me, I felt the pain abate, and after about a quarter of an hour’s continuance of the operation I was comparatively free from pain. While the men were rubbing me, I was able to discern to some extent the cause of my distress. Countless hairs, like tiny arrows, almost transparent, pointed at either end, and from a third to a fourth of an inch long, had dropped down on me in an invisible shower from the agy-tree, as I passed and stood under it. Ere I came away that afternoon, very cautiously I ventured to examine the tree at a little distance, and found that these

tiny hairs grew outside a thickish pod or shell, not quite so large as a small banana. These pods were fully ripe (unluckily for me) just at that very time, and the light wind was scattering their covering."

Mr Baron says that the agy is *Mucuna axillaris*; it is not, however, "a tree," but a climbing plant, and had grown over the tree under which Mr Montgomery happened to pass. He had himself a similar experience on his way to Mojangà, and the sensation "reminded him of the sting of a nettle, but was ten times more virulent."

Our second day's canoe voyage brought us into a part of the river, with many windings among park-like glades of trees. Then the lovely fan-palms became very numerous; at times we passed closer to the banks, a tangled mass of *bàraràta* bending down into the river, and the tall grey columns of the palms standing up sometimes from the very edge of the water, with their graceful crown of green fans sharply defined against the blue of the sky. Everything seemed to be steeped in light and heat. Surely of all the millions of beautiful things in this beautiful world, palms are among the most lovely, and the fan-palm not least among this glorious family of trees. It was a perpetual delight to the eye to watch them as we swept rapidly by the banks with the strong current, as one by one they passed by as in a panorama. But for mosquitoes, certainly parts of the tropics are earthly Edens. These palms are called *Sàtranabé*, and are much used by the western peoples in building their huts. A smaller species, called *Sàtramira*, is also employed in manufacturing mats and baskets. Both are species of *Hyphæne*.

But beautiful objects were not the only ones prominent in this journey, and the presence of the scaly reptiles we saw every few minutes was not altogether in harmony with the graceful palms. They seemed, indeed, to be somewhat out of place, "survivals," as indeed they are, of an earlier age of the world when gigantic saurians—creeping, walking, swimming and flying—were the ruling existences, in a world of slime and mud and ooze, and not in accord with these beautiful trees, which seem as if they should rather be associated with bright-coloured birds and insects than with these crawling saw-backed monsters. Beautiful birds were not wanting, however, in the scene, for

we came across a flight of lovely little sun-birds, with bright metallic plumage, which glittered in the sunshine.

Birds are not the only flying creatures to be seen in this western region ; although I was not so fortunate as to see them, Mr Grainge, in travelling down this river in the preceding year speaks of seeing great numbers of fruit-bats (*Pteropus edwardsii*). Their flight is slow, and broken at each moment by strokes of the wings ; and those he saw flew so straight and steadily that he took them at first, in the doubtful evening light, for benighted crows. He also remarks that they were always flying in a direct line *from* the setting sun. One that he shot measured more than four feet across the wings. M. Pollen says that they may be seen sometimes in broad daylight, flying from one forest to another, when one might take them for crows. He also remarks : “ I have observed these animals fly like swallows over a lake, just skimming the surface of the water with their wings. They choose isolated places, especially the little wooded islands at some distance from the coast.”

Madagascar is the home of one or two other species of fruit-bat, two species of the horseshoe-bats (*Rhinolo-phidæ*), seven species of the *Vespertilionidæ* or true bats, and three species of the *Emballonuridæ* or thick-legged bats ; no doubt there are still many species undescribed, and until much more minute investigation is made of the fauna of the island, the crepuscular and nocturnal habits of these animals will always make it difficult to learn much about their peculiarities.

The morning's voyage brought us in several places along low sections of stratified sandstone rock, looking like ruined walls, some courses being deeply honeycombed by the action of the water, while others, of harder material, were smooth, like newly laid masonry. It was clear that we had left behind us, in the upper highland, the crystalline rocks, the granites and gneisses and the like, and were in a region of Secondary strata, like the oolites of our own country. Subsequent examination by many observers has confirmed this fact, and shown that an extensive series of Jurassic and Cretaceous rocks occupies a great portion of the western low land, from north to south of the island. These plains must have formerly been a portion of a wider Mozambique Channel than now exists to separate Madagascar from Africa.

In certain shales which occur among the Secondary strata of the western plains, Belemnites are so numerous that the Sàkalàva used them as rifle balls ; while many species of ammonites are formed, some being a foot in diameter.

As we proceeded, the country became more hilly and with more extensive woods ; but as for population, not a soul did we see, except two women at one spot, and again we asked, where are the people ? And here a few words may be said about the inhabitants of this part of the country. Along about two-thirds of the western side of Madagascar, the people are loosely called Sàkalàva ; but every district has its people with its own tribal name, for “ Sàkalàva ” was originally the name of one particular tribe, which, through European or Arab admixture and the possession of fire-arms, conquered the other tribes and founded two kingdoms, Ibòina to the north, and Mènabé to the south. These Sàkalàva kingdoms were the dominant ones in the island until the beginning of the nineteenth century, when the Hovas gradually obtained the leadership. Physically, these people are taller and stronger than the Hovas, are darker in colour, less civilised, and have an African strain in them, from their proximity to the continent. Still, they are not of African stock, but are no doubt, Melanesian in origin. Their language presents a good deal of difference from the Hova form of Malagasy, both in vocabulary and in pronunciation, yet the groundwork and the grammar is essentially the same. They are more nomadic in habit than the Hovas, breaking up their villages at the death of any of its inhabitants, and not cultivating rice like most Malagasy tribes, but subsisting largely on manioc root, bananas, fish and vegetables.

We stopped to lunch under a fine adàbo-tree ; all along the main branches of this tree, the small fig-like fruits were clustered by hundreds, most of them being ripe and scarlet in colour. During an afternoon's voyage the river became narrower, but with a deep and strong current. We lost the fan-palms, but passed for some miles along a beautifully wooded portion of country, with fine large trees, like those in an English park, and growing close to the water's edge. One of these beautiful trees, however, has a very vile odour when cut up for timber, so that although the wood is good for carpentry, when new it is in the highest degree offensive. It is called *Komàngo*, and the people

say that its smell, as a tree, is so strong that birds settling on its branches die immediately. A high price is given for chips or twigs of the tree, to be used as charms, for few are daring enough to cut it down.

¹ *Mòka* is the native word for “mosquito”; *Mòkafòhy* is, literally, “short mosquito”; but the insect is not a gnat, but a fly, and its name is, more correctly, *Aldy*.

CHAPTER XXIII

TO THE NORTH-WEST COAST

CROCODILES are not the only reptiles to be seen in the river, for we also saw many large tortoises. They were chiefly of the genus *Pyxis*, the Geometric or Box tortoise, having the carapace divided into large hexagons beautifully marked, and were basking in the sun on small spits of sand rising just above the surface of the water. A carapace which I afterwards procured on the coast was about eighteen inches long. Two other species are also found in Madagascar, named respectively, *Testudo geometria* and *Testudo radiata*.

In former times the lakes and marshes of the island were inhabited by an immense species of tortoise, whose remains have been found together with those of the gigantic birds (*Æpyornis*), the hippopotamus and the great extinct lemurs, all of which were no doubt contemporaneous, lasting until the arrival of man on the scene. But although extinct on the mainland of Madagascar, they seem to have survived on the Mascarene group of Mauritius, Réunion and Rodriguez until a very recent date, and they are still living in the little island of Aldabra, which is about two hundred and sixty miles north-west of Cape Ambro. There are two living examples of these huge creatures in the Regent's Park Gardens. The male tortoise, which is much the larger of the two, is five feet five inches in length, and five feet nine inches in breadth, broader, in fact, than it is long. It weighs about eight hundred pounds, and is believed to be able to carry a ton weight on its back. It is now at least a hundred and fifty years old, but is still young and is likely to grow to a much greater size. From the geometric-shaped plates of its carapace, it seems to be allied to the geometric tortoise, still plentiful in Madagascar, as we have just seen. Until lately, it was supposed that these great tortoises were becoming extinct on Aldabra, but by the most recent accounts of the island, it appears that this is not likely to be the case, the dense jungle of

pandanus giving them ample protection, as it is at night when they leave this shelter, and go in search of food.¹

Although we saw no villages during this day's voyage, there was evidence of some population, in people fishing along the river bank, canoes moored by the shore, and women drawing water, carefully avoiding going into the stream, and filling their vessels with a small gourd fastened to a long bamboo. The scenery also was more varied, there being lines of low hills, partly covered with wood, and the banks of the river lined with large trees.

Our third day's voyage took us again along a very beautiful extent of park-like scenery. All yesterday afternoon we were gradually approaching a long line of blue hills running north-north-west and south-south-east, and this morning we got nearer to them. They appeared to be about a thousand feet high, and almost covered with dense forest, with patches of rock and red clay showing here and there. Landing at noon for lunch among magnificent trees, I noticed that these were swarming with ants, which covered the trunks and devoured every fruit as soon as it became ripe.

During this journey to the north-west, we saw no mammals except herds of oxen; but as there *are* a few others, it will be fitting here to say something about the largest carnivorous animal found in the island, especially as this district is its special habitat. This creature is called by the people, *Fòsa* (*Cryptoprocta ferox*), and although small is very ferocious, as its specific name denotes. The *fòsa* differs from most of the felidæ by the greater elongation of the body, including the head, and it is plantigrade, like the bears, and not digitigrade, like the majority of the cats. In its structure it resembles the jaguar, and in its colouring the puma, indeed it is very like a small jaguar, as it has thick glossy fur of a tawny-brown, which becomes somewhat darker under the body. Its total length is four feet eight inches, but of this the tail occupies two feet two inches, and it stands about one foot three inches high. For its size, the animal is powerful, but it is not dangerous to man, except when it is wounded, or at the breeding season. It is destructive to poultry and small animals, and it is able to emit a very fetid odour from an anal pouch, with which fowls are said to be killed. Examples of the *fòsa* have been seen in the



THE FOSA

It is the largest Madagascar carnivore, and is like a small jaguar



MALAGASY OXEN

Note their large humps and horns

outskirts of the upper belt of forest on the east side of the island; and of somewhat larger size than the dimensions already given. A specimen I once saw was of a beautiful black colour, but I believe this was only a variety, and not a distinct species from the brown animal. The fòsa is much dreaded by the Malagasy, and, from its mode of attack, appears to be like an immense weasel, attacking large animals, such as the wild boar and even oxen. Like the aye-aye among the quadrumana, and many of the native birds, the fòsa has no near relative, and therefore a new family had to be formed for it, of which it is the only genus and species.

The other carnivora of Madagascar are all small animals, and are rarely seen except when trapped. They all belong to the viverridæ or civets, two to the civets proper, five (or six) being mungoses, and one, an ichneumon. The mungoses, known to the Malagasy under the name of *Vontsira*, somewhat resemble the weasels and ferrets of Europe, except that they are not exclusively flesh feeders. They feed upon poultry, rats and mice, and also fruits. The ichneumon, or *Fanàloka*, is about twenty inches long, with a bushy tail of about a third that length, and is covered with thick warm brown fur. Its claws are long and are used to dig up the eggs of the crocodile, on which it is said to feed.

Although we saw an occasional angler on the banks of the river, we were not fortunate enough to see any of the fish. According to M. Pollen, the rivers of the north-west contain a number of fish, many of which are coloured in a most striking manner; the plates of his valuable work on the fauna of the island show these as banded and barred with the most vivid colours—blue, scarlet, black and yellow—in fact, very much like those strikingly coloured and curiously marked fishes which inhabit the sea round coral reefs and feed upon the brightly tinted polyps.

Wednesday afternoon's voyage was, as regards scenery, the most beautiful of the whole journey. Instead of the country becoming flatter as we approach the sea, it increases in boldness and picturesqueness. Lines of hills covered with wood lie in all directions, and amongst these the river winds, making sudden turns almost at right angles, so that we proceeded towards almost every point of the compass except due south. A few

scattered hamlets, of three to six huts each, began to appear. The crocodiles were numerous, from the old patriarch to the infant of a foot or so long. We must have seen a hundred of them that afternoon. We had some difficulty in landing and pitching our tents, and on account of the heat and the mosquitoes passed the most uncomfortable night of the entire journey. Hardly anyone was able to sleep, and I was glad to get up at four o'clock and dress in the bright moonlight and rouse up the others.

Our fourth (and last) day of canoe voyaging was begun soon after six o'clock. Outrigger canoes made their appearance, a style of craft the Hovas seem never to have invented, nor are such in use on the east coast. The scenery increased in boldness, with precipitous hillsides rising from the side of the river, which here was about the size of the Thames at Kew. About an hour after leaving, we found the current running up the stream; it was feeling the influence of the tide from the ocean, still many miles distant. The foliage was most dense and luxuriant, from the summit of the hills down to the water's edge, in some parts the long lianas forming immense festoons and making a perfect wall of exquisite green, while the ever-present *bàraràta* shoots up its feathery head. After some time we turned from the main stream into a branch river, much narrower, but running for many miles in a straight line. As the day advanced, the intense sunlight made everything glow with light and heat, lighting up the dense vegetation most brilliantly. Groups of pandanus were frequent here among the more European-like trees; these are of two species, one rising into a lofty cone, almost like a low poplar, and the other one more spreading and brandishing, with the aerial roots rising high above the ground. After an hour or two we came again into the main stream, here more than a mile wide, the banks being still thickly wooded. It was intensely hot, and we were not sorry to see Màrovoày ("Many crocodiles") a few miles ahead of us on a detached hill to the east of the river.

At one o'clock we stopped when opposite the town, the water approach to it being by a small tidal stream which flows into the main river some miles farther down. Our men were just enough to carry the wife and baby and little girl in their palanquin across the mile or two, while the native nurse and I walked;

the others, who were some way behind, had to go farther down the river in the canoes, and consequently had three or four hours' paddling in the glowing afternoon sun, which we who took the land journey avoided.

Màrovoà is situated on the north-east bank of a small river, which we had to cross by a canoe. Nearly a dozen dhows were either anchored in the stream or aground on mud-banks, giving the place the aspect of a small fishing town. The lower town, with perhaps two hundred houses, was chiefly occupied by Arab and Indian traders, their stores and warehouses lining the main street through which we passed. The Hova town and government compound (*ròva*) was on a low hill, rising abruptly from the level to the height of eighty or a hundred feet. Coming up to the gate of the *ròva*, we stopped to rest and sent word of our arrival to the governor. While we were waiting, one of our men thoughtfully got us a coffee-pot full of *rànom-pàry* (sugar-cane juice), and never did nectar taste more delicious than that as we took repeated "pulls" at it after our walk across the rice-fields in the glowing sunshine.

Presently we were invited to enter, the governor coming out to meet us, and brought us into his house, a rather smartly furnished place of one large room, but with a wide gallery all round it. Here we were glad to rest after our hot voyage and walk, and enjoyed an excellent cup of coffee, which they kindly made for us, as well as some of Huntley & Palmer's "best mixed biscuits." We felt as if we were getting back into a civilised land again! After a little while we moved into the chapel, which was also within the *ròva*; this was a large building, and looked quite gay, from being completely papered with good wall-paper, but badly laid on, for the native workman evidently thought that the white edging to each piece was a part of the pattern, and so had carefully left it visible in every case! The wooden posts of the roof were all papered too. The pulpit was a curious example of its kind, being made of lattice-work, gaily painted, with a number of small looking-glasses let into its front, and backed by wall-paper. It had a flat canopy or sounding board and a large door, so it was like a little room of itself. With its numerous doors and windows there was a beautiful breeze through the building, and we anticipated a comfortable night, but, alas! our hopes were not realised, for the heat was

intense, and the mosquitoes persecuted us by hundreds. This town is probably one of the hottest in the island, and we were told that later on, in the rainy season, the place is almost unbearable from the clouds of these insects.

Our day at Màrovoày was occupied chiefly in arranging for leaving for Mojangà the same evening, and in transferring all our baggage to one of the dhows lying in the river. There is an extensive view from the upper part of the town, as the country is very flat for many miles round. In the evening we dined with the governor and his wife in the *làpa*, and went down to the river at about nine o'clock. With some difficulty, in the darkness, we transferred ourselves and palanquins, etc., from shore to canoe, and from canoe to dhow, and at last were crowded together as thick as we could sit and lie on the little deck. The ship we embarked in was about thirty-five feet long, by fourteen or fifteen feet beam; the middle portion open to the keel, but with a little deck forward and another aft. This small quarter-deck was about ten to twelve feet square, and when the two large palanquins for the children to sleep in had been placed on either side, ~~there was not much space left for five~~ adults to pack together, in fact we had about as much room as would be found on a good-sized dining-table.

Soon after ten o'clock we got under way, the tide having begun to ebb for the previous hour or two. There was no wind, so six men rowed us down the stream, accompanying their work with the most curious weird-sounding songs, in Arabic, I suppose (or perhaps Suahili), some of them sounding very comic. We swept down rapidly with the tide, the trees looking dark and gloomy in the uncertain light, and presently the moon rose. After an hour or two we got into the main river, and in a little time had to cast anchor, as the tide had turned. It was a strange night, and we did not get much sleep, as we had not room to turn, so we waited impatiently for the dawn. Dawn, however, brought with it a cloud of mosquitoes from the low swampy ground bordering the river, which was thick with mangroves and rank vegetation. Just at twilight they surrounded us by thousands; but as soon as the sun rose, they disappeared, a gentle breeze sprang up, and we set sail. The river widened as we proceeded, until it became a large estuary, and gradually opened into the Bay of Bèmbatòka. The breeze

freshened as the day advanced, and we sailed at a considerable speed.

These dhows are first-rate sailers ; they carry one large sail, in shape like a triangle with one corner cut off. But what struck us as very curious was that when tacking, they did not run into the wind's eye as a European ship does, but they turned the dhow right round before the wind, while shifting the long boom to the other side of the mast. But they sail very close to the wind, and seem excellent sea boats. This form of ship is probably a very ancient one, for vessels very similar in shape and rig are figured on the Egyptian monuments, and most likely the "ships of Tarshish" were only rather large dhows. The largest of these vessels have two masts, the one at the stern being much smaller than the other, and both have a *rake* forward, instead of aft, as in European ships.

Our spirits rose with the wind, for there had been many prophecies at Màrovoà that we might be a long time on the way, and, in fact, some friends who preceded us by a month or two were actually three nights on the voyage. But we bounded over the waves and soon felt a considerable swell. Bèmbatòka Bay is so wide for a considerable distance that the north-western shore is only faintly visible, but it narrows again towards the mouth, and a line of hills running out to the western point defines its outline very clearly ; opposite Mojangà it is about five miles across. Towards noon they pointed out to us a projecting headland, some way ahead to the right, and told us that after rounding that we should see Mojangà. The wind continued strong, but as it got more and more ahead, we had to tack repeatedly. At about half-past three o'clock we reached our destination, casting anchor a quarter of a mile or so from the beach.

Mojangà was a decidedly pretty and picturesque-looking place from the sea, and a much more civilised-looking town than any I had previously seen in Madagascar. Instead of rush and bamboo houses, there was a long line of white flat-topped buildings of two and three storeys, some having castellated battlements. A score or two of dhows were at anchor in the roads, but there was no European vessel in the harbour. Behind the Arab and Indian town the ground rises gently for two hundred or three hundred feet, and at the top of this higher

ground is the *ròva* and Hova town. Between the two, and to the north, is a beautiful park-like expanse, thickly studded with magnificent trees, chiefly mangoes, which here grow to a great size, as well as baobabs, and clumps of cocoanut-palms and a few fan-palms. A fort crowns the crest of the hill to the north; and altogether, we were agreeably surprised with Mojangà. Just as we had cast anchor, we were surprised to see several camels brought down to the sea for a bath. They were imported from Aden some time ago by a French firm, but had not proved a success, commercially, for Madagascar has too damp a climate for animals accustomed to the sand and gravel of the Arabian desert. We had not landed many minutes before our brother missionary, Mr Pickersgill, then stationed at Mojangà, came down and gave us a hearty welcome and every assistance with our baggage, etc. Our little family party found quarters in the verandah of the house of a Madame Beker, very near the shore, while the others went to stay with Mr Pickersgill near the *ròva*. This house was of coral rock, plastered, but was so hot that we preferred the verandah, which was roofed with fan-palm leaves and surrounded with the same slight materials. We were glad of the quiet and rest we had there for a week after our two or three weeks' travelling by land and river.

The following morning, Sunday, the mail steamer, *Packumba*, came in about midday, but left again for Mozambique in the afternoon. On going on board to see the ship we were to sail in, we found that her main deck was arranged so as to take a great number of passengers, the iron plating at the sides all turning up on hinges to allow a free passage of air. I was glad to be able to preach to a large congregation in the native church during the afternoon.

The week at Mojangà passed away rapidly, for we had plenty to do in rearranging and labelling luggage, disposing of our palanquins, bedding, and other no longer needful property, and preparing for our voyage. At this town we found ourselves in quite a different place and surroundings from what we had seen everywhere else in Madagascar. We were in the midst of an Indian and Mohammedan population, the traders here being mostly Banians and a large proportion of them British subjects. Hindoo speech, dress, ornament, and customs met us at every

turn, and also those of the Arabs. The houses are chiefly built of coral rock, plastered with lime, and roofed with fan-palm leaves. The door and window openings are made with flat-pointed and zigzagged arches; and when the rooms are wide, a line of piers and arches runs down its length, giving a cool depth of shade quite Eastern in its effect. The doorways have elaborately carved lintels and posts; these are all done at Bombay and brought here ready for fitting. There is a little stone carving also here and there, and Arabic sentences are carved over the doors in some cases. The men are in Indian dress, and the women with nose-jewels, silver armlets and anklets, and the long muslin robe thrown over the head and wound round the body.

Arabic dress and customs were not less prominent in Mojangà. Close to our lodging was a small mosque, and from the flat roof we could hear the *muezzin* calling the faithful to prayers five times a day in a long sonorous musical cry—before sunrise, in the forenoon, at noon, at three o'clock, and at sunset, and could see his form silhouetted against the sky, making a number of prostrations when the call was finished. Our stay here was in the month Ramazan, the great fasting-time of the Mohammedans, when they eat and drink nothing all day, at least the strictly orthodox do not. They make up for it, however, at night; and feasting and jollity seemed to be the general employment. Our house adjoining the main street, it was extremely noisy until long after midnight. There is no doubt that the Arabs, and also the Indians, have been settled at Mojangà, as well as at other places on the north-west coast, for centuries. As we have seen in Chapter XII., there was an Arab colony at some remote period on the south-east coast, but this was gradually absorbed and lost in the native population and no longer maintains a separate existence. The north-western colony, however, being in constant communication with Suahili land and the Arab element there, has maintained its individuality, and kept its dress, customs, language, and religion quite distinct from the Malagasy around it.

Amongst the magnificent mango-trees in the park are many specimens of the baobab-tree (*Adansonia madagascariensis*); one of these must be from seventy to eighty feet in girth. The trunks of these trees are of enormous size compared with the

small expanse of the branches ; and their glossy dark brown bark, their rapid tapering upwards, and their bareness of foliage for the greater part of the year, mark them very distinctly from all others. They are curious in appearance, but not at all beautiful. The bark is used to make rope, and the sap is said to be potable and tasteless ; the wood, however, is so soft that it can be pulled away by the fingers.

Many trees affording beautiful and valuable timber are found in these western woods ; among these is one yielding the kind called by cabinet-makers "zebra-wood," while ebony is obtained from one or more of the twenty-two species of *Diospyros* known in the island. We have seen the mangrove (*Rhizophora mucronata*) on the shores of Bèmbatòka Bay, and this tree is found at the mouths of almost all the rivers and inlets on the north-western coast, where it is the most prominent feature in the extensive swamps, probably also helping to extend the land.

We had no opportunity of seeing the largest of the Madagascar birds, the *Ankoàÿ*, or fishing eagle (*Haliaeetus vociferoides*), although it is found all along the western coast. It is a large and handsome bird, and is said to keep watch on a tree or cliff at the edge of the water, swooping down like lightning into the sea after its finny prey, and being able to arrest instantaneously its downward flight. M. Grandidier says that a single pair of these eagles is found in very many of the innumerable small bays of the north-western coast, and of this they take exclusive possession, allowing no other eagle to encroach on their own preserves. They feed principally on fish, catching adroitly those which appear near the surface. The name of *Ankoàÿ* applied to this bird appears to be an imitative one derived from its cry of *hoai, hoai*.

It is doubtful whether there is another eagle really indigenous to Madagascar, although a harrier-eagle (*Eutriorchis*) was once shot in the Mangòro valley ; if this was not a chance immigrant, it must be extremely rare. This one example was remarkable for the extreme shortness of its wings, and immoderate length of tail.

One of the most important occupations of the coast Sàkalàva is the catching of turtles (*fàno*). Some of these creatures are oval in form and very fat and plump, others are much thinner and flat ; of these latter, some are said to attain a length of

eight or nine feet. In catching them the natives go out to sea in the early morning, when the turtles come to the surface to enjoy their morning nap, and at which time the sea is usually very smooth. A kind of harpoon, about twelve feet long, shod with a piece of barbed iron is used, and to this a strong rope, a couple of hundred yards in length, is attached. Great care and caution has to be used in approaching the sleeping animal, for, if struck, it dives down immediately, and the fisherman will not leave go of the rope, but dives down with it, if the water is deep. The natives seem to be able to stop an extraordinary time under water. As soon as the turtle is secured, the captors make for the shore, and all the people gather together to share in the feast. Nobody must bring anything from a house to the spot, for the animal must be wrenched open and cut in pieces with knives belonging to the canoe, it must be cooked in sea-water in the shell of the turtle itself, and served in scoops or other vessels from the canoe, or in pieces of turtle-shell. None of the flesh is allowed to be brought into a house to be cooked or eaten there. All these and several other precautions are ancestral customs and must be religiously observed, or the turtles would disappear.

A curious account is given by the natives of the north-west coast of a fish which they call *Hàmby*, whose length is said to be about that of a man's arm, and its girth about that of his thigh. Its dorsal fin, they say, is just like a brush, and it has a liquid about it, sticky like glue, and when it fastens on to another fish from below, with this brush on its head, the fish cannot get away, but is held fast. On account of this peculiarity, the people use the *hàmby* to fish with. When they catch one, they confine it in a light cage, which they fasten in the sea, feeding it daily with cooked rice or small fish ; and when they want to use it, they tie a long cord round its tail and let it go, following it in a canoe. When it fastens on a fish they pull it in and secure the spoil. I wonder whether this fish has any connection with one found on the east coast, which is called *Ladintavia*, and is said by Mr Connorton to be covered with a kind of slime, so that when many of them are together, it looks as if they are floating in a thick lather of soap.

Two or more kinds of oysters are found on this north-west coast ; one of these is called by the people *Sàja*, which may be

seen covering the rocks in great abundance on the seashore at low water. It is a small oyster, but excellent in quality. Another kind, called *Téfaka*, is only found at some depth below water. It is a much larger oyster than the *sàja*, with the interior of the shell beautifully pearly. It is said to be delicious in flavour. Quite recently an English company was projected to exploit these oyster beds for pearls and for the pearly shells themselves.

Another sea-living creature in Madagascar waters is a species of octopus called *Horita*, which, notwithstanding its repulsive appearance, is reckoned a delicacy by the coast people, although Europeans who have tried it pronounce it as tough and gluey and uneatable, although cooked for a long time.

The north-west coasts, from the numerous estuaries surrounded with trees, are particularly favourable for such birds as the herons, some species of which are regarded as sacred by the natives, and are consequently less shy than these birds are in Europe, while others are very wary and most difficult to approach. In habits and feeding these Madagascar herons are much like the European and African species, mostly living on fish, molluscs and crustacea, the larger ones devouring reptiles and small birds and mammals, while the smaller kinds are insectivorous. They are often found in companies, including several different species, settled on the trees overhanging or near water, and remaining perfectly motionless for a long time. Some of the herons appear to be very common, as the ashy, the black-necked, the purple, the white-winged, the garzetta, and some others, and especially the small white egret, which we have noticed more than once in these chapters. Fifteen species of heron are found in Madagascar, three storks, a spoonbill, five ibises and a flamingo.

It was a pleasure to us during our week's stay at Mojangà to meet with several old acquaintances among the Hova officers stationed there; anyone coming from their loved Imèrina always received a warm welcome. On the Saturday of the week after our arrival there, the *Packumba* returned from Africa, and on the following morning we left in her for Aden and Europe. Steaming northwards, we kept in sight of the mainland of Madagascar during the next day, and this appeared bold and mountainous, and very different from the greater

portion of the eastern coast of the island. There were many islands rising precipitously out of the sea, while ahead of us the lofty mountains of the island of Nòsibé soon appeared. These looked exactly like portions of the interior of Madagascar set down in the midst of the sea ; the same red clay soil and the same markings of valley and ravine as seen all through the interior plateaux. Two or three very regular volcanic cones, truncated and showing the craters, were very prominent ; these are parts of that chain of extinct vents of which we have seen numerous examples in our travelling through other parts of the country. Besides the main island of Nòsibé, there are many outlying portions of it, looking like detached islets dropped into the sea. Some of these are densely wooded from base to summit. Altogether, as may be seen from a brief glance at the map, the north-western side of Madagascar is totally different, with its numerous deep bays and inlets, from the eastern side, where there is almost a straight line for many hundreds of miles. The geology of the two sides is very different, and this has powerfully affected their physical geography.

We stayed several hours at Nòsibé, discharging and receiving cargo, and it was nearly sunset when we steamed away to the north-west for Mayotta. For several hours we could still see the island and the mainland by the glare of the burning grass on the hillsides ; and these, for more than five years subsequently, were the last glimpses we had of Madagascar.

¹ See "The South-West Indian Ocean" ; by J. C. F. Fryer ; *The Geographical Journal*, September 1910 ; pp. 249-271.

INDEX

- ABODINANGAVO, 70
 Adabo-tree, 252, 289, 299
Aepyornis, 213
 Agave, the, 32
Agy, a stinging plant, 297
 Alamazaotra, 63
 Alaotra, Lake, 68, 174, 193, 197, 207
 Alatsinainy, 116
 Algæ, species of, 200
Aloe macroclada, 90
 Aloes and agaves, 91
 Ambahy, 270
 Ambatoharanana, 56, 109
 Ambatomanga, 72
 Ambatondrazaka, 178, 205
 Ambatovory, 127
 Ambinany, chief, 237
 Ambodinonoka, 185
 Ambohidehilahy, 184
 Ambohijanahary, 194
 Ambohimananarina, 103
 Ambohimanga, 77, 105, 121, 205
 Ambohimiangara, 209
 "Ambohimitsimbina," 76
 Ambohinamboarina, 229
 Ambohipeno, 188, 253
 Ambohitromby, 187
 Ambohitritankady, 120
 Ambohitsara, 196
 Ambohitsitakatra Mountains, 174
 Ambohitsoa, 201
 Ambondrombé Mountain, 234
 Amboro Mountain, 61
 Ambositra, 230
Amiana, or tree-nettle, 122, 146
 Amparafaravola, 185, 188
 Ampasimbé, 57
 Ampasimpotsy, 68
 Analamazaotra Mountains, 175
 Ancient towns and villages, 113
 Andohalo, 118
 Andovoranto, 45
 Andraikiba, Lake, 215
 Andranokobaka, 176
 Andranokoditra, 38
 Andriambavibé, 64
Andriana, 25
 Andriba Mountain, 289
Andropogon contortus, 190
 Angavo Mountains, 69, 71, 229
 Angavokely Mountain, 71
Angræcum, orchid, 32
 Animal life, ancient, 225
 Animal life, peculiarity of, 66
 Anivona-palm, 276
 Anjozorobé, 174, 206
 Ankarana, 264
 Ankaratra Mountain, 61, 77, 208, 219, 221
 Ankay, plain of, 68, 127, 175
 Ankeramadinika, 71, 127
 Ankitsika, 195
 Anorohoro, 205
 Antananarivo, 73
 Ant-hills, 176, 234
 Ants, destruction by, 34
 Ants' nests, 130, 289
 Antsesika river, 222
 Antsihanaka Province, 173
 Antsirabé, 101, 211
 Antsirabé plain, 219
Apenthes madagascariensis, 42
 Aquatic fowl, 186
 Arabic influence, 255, 309
Ardea bubulcus, 34
Arondovy, the, 251
 Arums, Gigantic, 34, 253
 Asabotsy, market at, 116
Astacoides madagasc., 157
Avara-patana, or place of honour, 98
Aviavy, a species of *figus*, 122
 Aye-aye, the, 45
 BALL-INSECT, 159
 Bamboo, the, 49, 57, 65
 Banana-trees, 49
 Baobab-trees, 309
 Bara people, the, 233
 Baron, Mr, 60, 127, 138, 200
 Bats, 298
 Bearers, our, 55, 228
 Bee-eater, 170, 291
 "Beefwood tree," 41
 Bees, the enemies of, 145
 Bees, wild, 144
 Beetles, 132, 154
 Beforona, 59, 61, 175
 Behosy, the, 147
 Belemnites, 299
 Bembatoka, Bay of, 77, 161, 307
 Benyowski, Count, 235
 Betafo, 208
 Betsiboka, River, 77, 174, 295
 Betsileo province, 229
 Betsimitatatra, 77, 92
 Betsimisaraka people, the, 43

- Bezanozano tribe, 68
 Bird life, 65
 Bird life, scant, 279
 Birds, extinct gigantic, 213
 Birds: parakeets, green pigeons, cardinal-birds, sun-birds, 32; crows, 34; egret, 34; ducks and geese, 38; storks, herons, 69; rapacious, 82; egret, 105; crow, 105; king-fisher, 105; song, 137; sun-birds, 137; rollers, 138; shrike, parrot, warbler, cuckoo, wood-pigeon, hawks, 138; goat-sucker, 140; owls, 140; weaver-bird, 169; bee-eater, 170; birds on Lake Itasy, 210; parrots, 233; Prevost's broad-bill, 281; black parrots, 291; bee-eater, 291; fork-tailed shrike, 294; fly-catcher, 295
 Blow-pipe, native, 61
 Boa, a, 44
 Botanising in Madagascar, 128
 "Bound-by-blood" ceremony, 235
Brehmia spinosa, 42
 Bridges, 187, 194, 234, 238
Buddleia madagasc., 90
 Buildings, modern, 99
 Bull-baiting, 194
 "Bullockers," 20
 Burial customs, 43
 Butterflies, 110, 254

Cærostris stygiana, 162
Cæsalpinia sepiaria, 90
 Camels, 308
 Canals, 37
 "Candle-nut-tree," the, 158
 Canoe chants, 271
 Canoes, native, 33
 Cape Lilac, 81
 Cardinal-birds, 32
 Carnivora, species of, 66, 167, 303
 Carving in Betsileo, 230
Cassia lavigata, the, 90
Cassia, 36
 Casuarina, the, 270
 Caterpillars, 132
 Caterpillars, a bag of, 130
 Cattle rearing, 182, 195
Centetes ecaudatus, or tail-less tenrec, 167
 Centetidæ, the, 278
 Centipedes, 160
Cercopis species, 91
 Chameleons, 135, 288
 Chameleonidæ, species of the, 135
 Charms, 86, 249
Cheirogaleus minor, 243
 Children, Hova, 122
 Cicada, the, 171
 Clay in building, use of, 96

Clematis bojeri, 101
 Climate, 75
 Climbing plants, 37, 142
 Clothing of the Malagasy, 124
 Coast-line, the, 36
 Coffee, 51
 Cold month, the, 124
 Commelina Madagasc., 89
 Constellations, Malagasy names for, 125
Conus, 36
 Convolvuli, 49
Coraciadæ, 138
Coracopsis obscura, 234
Corvus scapularis, 34
 Cory, Mr, 99
Cosmaria, 200
 Couas, the, 170
 Crabs, 35
 Crater lakes, 215
 Craters, extinct, 208
 Crayfish, 157
 Crocodiles, 294
 Crocodiles of Lake Alaotra, 200
 Crocodiles, superstitious dread of, 49
 Crocodiles, extinct species of, 223
 Crows, 34
 Cryptogamic vegetation, 143
 Custom, a curious, 194
 Customs at the New Year, 88
 Customs of the Sihanaka, 203
Cycas thouarsii, 41
 Cyclones, 148
Cynoglossum, 101
Cypræa, 36

 DAUPHINE, Fort, 232
 Davidson, Dr, 74
 Day, divisions of the, 93
 Days, uniformity in the length of the, 92
 "Death-moths," 110
 Death's-head moth, 145
 Deciduous trees, 125
Delphinus pas, 275
 Dhows, 307
 Dialects, Hova and Malagasy, 236
 Dinner with the Governor, 191
 Dishes and spoons, primitive, 268
 Dolphins, 275
 Doorways, Betsileo, 236
 Dracæna, 289
 Dragonflies, 108
 Dress, children's, 125
 Dress, Sihanaka, 202
 Drury, Robert, 183
 Dry season, the, 113
 Dye from trees, 158

 EARTHQUAKE, 224
 Earthworms, enormous, 112, 155

- Ebony, 159
 Eels, 107
Efitra, or desert, 289
 Eggs of the *Æpyornis*, 213
 Egret, white, 105
 Egyptian kite, the, 83
Eleocarpus sericeus, leaves of, 158
 Embankments, 78
 Eucalyptus, cultivation of, 125
 Euphorbia, the, 60, 125
Euryceros prevosti, 281
- Fahitra*, or pens for oxen, 121
Famoa, 179
Fanataovana, or lucky heaps, 155
 Fauna and flora, 17
 Feather-bellows, 156
 Felana, or decoration, 233
 Ferns, 59, 128, 157
 Fianarantsoa, 232
 Fibres, for rope, 158
Filanjana, the, 18, 24
 Fire, method of producing, 151
 Fireflies, 271, 284
 Firing the grass, 82
 Fish, 39; octopus, 40; mullet, 40; prawns and shrimps, 40; shark, 40; sawfish, 40; dolphins, 275, 303
 Fishing, 196
 Fishing eagle, 310
 "Fitomanianomby," 63
 Flamingoes, 210
 Flora: orchids, 32; arums, 34; palms, 37; climbing plants, 37; ferns, 38; tangena, 38; sago palms, 41; *Filao*, 41; *Brehmia spinosa*, 42; *Hibiscus*, 42; *Stephanotis*, 42; *Ipomœa*, 42; pitcher-plant, 42; gum-copal, 42; india-rubber, 42; bamboo, sugarcane, manioc, banana, palms, pandanus, water-lilies, palms, convolvuli, traveller's tree, 49; raspberries, 51; coffee, 51; lace-leaf plant, 53; bamboo, 57; tree-ferns, 57; pine-apples, 57; *rofia*-palm, 58; ferns, 59; euphorbias, 60; orchids, 64; bamboo, 65; rice, 79; Cape lilac, 81; vine, 81; euphorbia, 81; orchids, 101; indigenous plants, 127; ferns, orchids, 128; grasses and ferns, 128; palms, 142; climbing plants, 142; cryptogamic vegetation, 143; mosses and lichens, 143; fungi, 144; spiny plants, 145; stinging plants, 146; ferns, 157; valuable trees, 158; Tamarind-trees, 295
 Flowers, comparative scarcity of, 64
 Fly-catchers, 295
 Food, curious articles of, 106
 Food, articles of, 23
 Forest, stillness of the, 60, 65, 277
 Fosa, the, 302
 Fosses, 119
 Fossils, 212
 Foundry, native, 156
 Fragrance of wild plants, 178
 French invasion, the, 28
 Frigate-birds, 255
 Frogs, 152
 Fruit-bats, 298
 Funeral, a heathenish, 276
 Funeral memorial, a, 268
 Funerals, expensive, 203
 Fungi, 144
 Furniture, 98
- GAMES, 122
 Gates of stone, 119
 Geese, 186
 "General Hazo" and "General Tazo," 28
 Geological formations, quartz, red sandstone, 39, 53
 Goat-sucker, the, 140
 Goudot, M., 91
 Grainge, Mr, and the cattle, 287
 Granaries, 54
 Grandidier, Alfred, 17, 169, 235
 Grasses and rushes, 128, 178, 191, 201, 206
 Grass, firing the, 72, 73
 "Grave of the French," 42
 Guinea-fowl, 186
 Gum-copal tree, 37, 42
 Gums and resins, 158
- HAIL, 86
 Hair-dressing, 252, 258
Hamby, the, 311
Hapalemur simus, 243
 Hawks, 84
Hazondrano, or rush, 108
 Hearth, the, 97
Hevana, the, 108
 Herons, 69, 312
Hibiscus, 42
 Hivondrona, 32
Hibiscus diversifolius, 90
 Hills, outline of, 52
 Hippopotamus, extinct, 212
 Hippopotamus Lemerlei, 212
 Hoar-frost, 113
 Hooker, Sir W. J., 54
 Horned memorial poles, 182
 Hospitality of the Malagasy, 41
 Hot springs, 53
 Houlder, Mr, and the boa, 44
 Houses, native, 23, 70, 236
 "House-horns," 97

- Hovas, 299
 Humped duck, 186]
- IARITSENA, 232
 Iatsifitra volcano, 224
 Ice, 92
 Ifanja marsh, 225
 Ifody Hills, 69
 Iharoka river, 45, 48
 Ihovana, chieftainess, 282
 Ikongo, 235
 Ikopa river, 76, 286, 291
 Imahazony, 236
 Imerina, 71
 India-rubber, 42, 158
 Indigenous plants, 128
 Insect life, 65, 279
 Insectivora, species of, 67
 Insects: ants, 34; cockroaches, 38, 43; a new spider, 43; beauty of, 70; spiders, 71; water producing, 91; black wasp, 99; silkworm moth, 109; butterflies, 110; grasshoppers, 111; mantis, 112; dog-locust, 112; nests, 130; ants, 131; beetles, 132; caterpillars, 132; spiders, 133; mantis religiosa, 153; grasshoppers, 153; beetles, 154; ball-insect, 159; millipedes, centipedes, scorpions, 160; venomous spiders, 162; protective resemblance, 164, 280; mokafohy, 289
 Intelligence of the people, 56
 Inundations, damage by, 78
 Iolomaka, 237
 Ipomoea, 42, 101
 Iron, 156
 Irrigation, 80
 Isoavina, 110
 Itasy, Lake, 208
 Itsiatosika, 275
 Ivalokianja, 236
 Ivatoavo, 232
 Ivohibé Mountain, 259
 Ivohitrambo, 283
 Ivohitrosa, 237, 241
 Ivoho volcano, 224
- JABORANO, 268
 Jacanas, 211
 Jaka, 50
 Jigger, the, 161
 Jiro, or memorial poles, 203
 Johnson, Rev. H. T., 107
 Joréry or cicada, 277
- Kabary or National Assembly, 117
 Kankafotra, or cuckoo, 82
 Kankandoroika, a species of worm, 277
 Karabo, the, 259
 Kestrel, the, 83
 Ketsa grounds, 79, 80
 "King-butterfly," 110
 Kingfisher, 105
 Kinoly, the, 159
 Kirombo roller, 138
 Kolikoly, or after-crop, 304
 Komanga-tree, 299
- LACE-LEAF plant, 53
 Ladders, primitive, 54
 Lagoons, 36, 273
 Lake-dwellers, 173
 Lakes and marshes, anciently a country of, 22
 Lamba, the, 25, 58, 62, 109
 Land-shells, 136
 Landonphia Madagas., 42
 Lapa, or Government House, 179
 Le Sage, Captain, 59
 Leeches, 157
 Lemur Catta, 243
 Lemur mongos, 45
 Lemuroid animals, extinct, 222, 226
 Lemuroida, species of, 66
 Lemurs, 45, 66, 67, 168
 Lichens, 116, 143
 Lightning, freaks played by, 85, 87
 Lilia, river, 209
 Lime deposit, 211
 Lizards, 43, 134
 Lizards, extinct species of, 223
 Locusts, 73
 Longozy plant, the, 249
 Looms, primitive, 58
- MADAGASCAR, 19; its ancient connection with Africa, 67
 Madagascar bee, the, 144
 Mahamanina, 257
 Mahavelona, 259
 Major, Dr Forsyth, 278
 Malarial fever, 42
 Mammalia, 66
 Mammals, species of, 278
 Mampita-hady, or fosse crosser, 109
 Manakambahiny, 185
 Mananara river, 174, 295
 Mananjara river, 275, 281
 Mandanivatsy, 207
 Mandraka river, 71
 Mandraka Valley, 142
 Mangasoavina, 289
 Mango-trees, 81
 Mangoro river, 69
 Maningory river, 174, 193
 Manioc, 49
 Mantidactylus genus of frogs, 153
 Mantis, a curious, 112
 Mantis religiosa, 153
 Market day, 181
 Markets, 116

- Marokalo, 290
 Maromby, 51
Maromita, or porters, 24, 30
 Marosalazana, 202
 Marovoay, 304
 Marshes, 108
 Masindrano, 275
 Matitanana river, 240, 295
 Matthey, M. C., 111
 Mats, Sihanaka, 185
 Mead, 145
 Medicinal waters, 212
 Medicine from trees, 158
Melia azederach, 81
 Memorial poles, 203, 231
Merops superciliosus, 170
Mesites, 211
 Mevatanana, 225, 292
 Millipedes, 160
 Mimicry amongst plants, 155
 Mineral wealth of the country, 57
Mitra, 36
 Mojanga, 285, 307
Mokafohy, insect, 288, 300
 Money, 117
 Months, origin of names of, 88
 Morafeno, 187
 Moramanga, 68
 Morarano, 187, 193
 Mortar and pestle, the, 97
 Mosses, 143
 Moths, 109
 Mouse-lemurs, 243
 Mozambique Channel, 67
Mugil borbonicus, 40
 Mullens, Dr, 31, 173
 Mullet, 40
Mundulca suberosa, the, 90
 Mungooses, 303
 Musical instruments, 56
 Mysore thorn, the, 146
 Mythical creatures of Lake Alaotra, 201

 NANDIHZANA, 229
 Native houses, structure of, 95
Nectarinidæ or sun-birds, 32
Neodrepanis coruscans, 137
Nephila spider, 109
 Nest of the aye-aye, 47
 Nests of insects, 130
 Nests of wasps, 99
 New Year, Malagasy, 87
 Nosibé, 224

 OBSTRUCTIONS in rivers and paths, 51
 Ocean currents, 39
 Octopus, 40, 312
Oliva, 36
Opuntia ferox, 145
 Oranges, 51

 Orchards, 81
 Orchids: *anagræcum*, 32, 38, 64;
 terrestrial, 101, 212
 Ordeals, 251
 Ornamentation, female, 240
 Outrigger canoes, 304
Ouvirandra fenestralis, 53
 Owen, Sir R., 45
 Owls, 140
 Ox, extinct species of, 223
 Oxen, 35, 183
 Oysters, 311

 PADDLES, native, 34
 Palms, 142
 Pandanus, the, 32, 37, 49
Papango, or Egyptian kite, 83
 Parakeets, 32, 233, 291
 Parrots, 233, 291
 Paths, forest, 150
 Pearse, Rev. J., 191
Pelophilus madagasc., 44
 Pigeons, 32
 Pillans, Rev. J., 173
 Pine-apples, 57
 Pitcher-plant, 42, 261
 Plant, Mr, 22, 67
Ploceus pensilis, 169
 Poison ordeal, the, 38
 Poison tree, a, 38
 Poisonous fish, 40
 Pollen, M., 137
Potamochærus larvatus, 136
 Prawns and shrimps, 40
 Prevost's broadbill, 281
 Prickly pear, 90, 119
Pristis sp., 40
 Proctor, S., 22
 Protective mimicry, 111, 153, 164, 280
Psittacula Madagasc., 233
 Pulpit, a decorated, 253
 Pumice from Krakatoa, 38

 QUADRUMANA, 66
 Quadrupeds, 167

 RADAMA I., 37
 Radama II., 38
 Rail, 211
Railovv, or fork-tailed shrike, 294
 Railways, 18
 Rain, 81, 85, 100
Rallus gularis, 211
 Ranavalona I., 38
 Ranavalona, Queen, 87
 Ranomafana, 53
 Rapacious birds, 83
 Rapeto, chief, 210
 Raphia ruffia, 62
Rary, or war-chant, 98
 Raspberries, 51, 242

Rats, 54, 59
Ravenala madagasc., 49
 Rayed Gymnogene, the, 84
 Religious observances, 250
 Reptiles: snakes, 134; lizards, 134;
 chameleons, 135; ancient, 226
 Rest-houses, 33
 Rice cultivation, 77, 79, 92, 103, 106,
 177, 195, 263
 Rice cultivation in Betsileo, 230
 Rice-houses, 241
 Ring-tailed lemur, 243
 River-hog, extinct species of, 223
 Rivers, 36
 Roads and pathways, 27
 Rocks, 223, 233, 292, 298,
Rofia-palm, 31, 56, 58, 62
Rofia cloth, 57
Rova, or square, 26, 179, 305
 Rollers (*Coraciadæ*), 138
 Rose-apple, the, 91
 Rum drinking, 176

SAGO palms, 41
 Ste Marie, Isle, 42
 Sakalava, 176, 299
Sakala, or loin-cloth, 55
Sampy, or household charm, 98
 Sanatoria, 127
 Sand-bars, 36
 Sand-grouse, 291
 Sandalwood, 159
 Sawfish, 40
 Scenery, 41
 Scenery of the coast, 37
 Scorpions, 160
 Screw-pine, 250
 Sea-birds, 256
 Seasons, the, 75
 Serpents, 43
 Shark, the hammer-headed, 40
 Shaw, Mr G. A., 235
 Shells, 35; *Conus*, *Triton*, *Cypræa*,
 Oliva, *Mitra*, *Cassis*, 36
 Shrimps, 107
 Sihanaka, the, 173, 184, 195, 203
 Silk, spiders', 109
Simpona, species of lemur, 169
Siona, 159
 Sloth, extinct species of, 223
 Smelting stations, 156
 Snakes, 43, 44
 Snare for birds, 185
 Snow, absence of, 113
Solanum auriculatum, 125
 Solitary wasps, 100
Songosongo, the, 146
Sopubia triphylla, 101
 Spade, the native, 79
 Sphærotheria, 160
 Spiders, 43, 71, 133, 162, 165,

Spiny and prickly plants, 145
 Springtime, 79
 Stephanotis, 42
 Stinging plants, 146
 Storks, 69
 Street, Mr Louis, 228
 Stribling, Rev. E. H., 192
 Striped tenrec, 167
 Sugar-cane, 49
 Sugar-cane press, a, 262
 Summer, 84
 Sun-birds, 32, 137
 Sunsets, beautiful, 123
 Swine, extinct species of, 223

TAIMORO tribe, the, 273
 Taisaka, the, 262
 Takatra, or stork, 69
 Tamarind-trees, 295
 Tamatave, 21; governor of, 24;
 garrison, 26
 Tanala, the, 147, 245, 249, 250
 Tangena, the, 38
 Tanosy country, a village in the, 163
 Telomirahavavy, 71
Terminalia catappa, or "Indian al-
 mond," 273
 Terraced hills, 230
 Threshing rice, 195
 Thunderstorms, 84
 Timber, valuable, 158
 Time, division of, 87, 93
 Tin cans on memorial poles, 183
 Tins, old jam, 192
Toirika or blow-pipe, 61,
Tokantongotra, 159
 Tombs in Betsileo, 231, 283
 Tombs, Hova, 72, 114
 Tortoises, 201, 301
 Tortoises, extinct, 223
Trachylobium verrucosa, 42
Trandraka or hedgehog, 167
 Tranomaro, 35
 Trap-door spiders, 165
 Traveller's tree, 49, 257, 260
 Travelling in Madagascar, 28, 229
 Tree-duck, 186
 Tree-ferns, 57
 Tree-frogs, 153
 Trees, introduction of new, 125
Triton, 36
 Tritriva, Lake, 215, 220
 Tropic-birds, 256
Tsikondry, the, 280
Tsingala, the, 107
 Twilight, 92
Typhonodorum lindleyanum, 34

VAKINANKARATRA, 208
 Valala river, 69
 Valalanambo, or dog-locust, 112,

Valiha, the, 56
 Vangaindrano, 261
 Variety of face and colour, 56
Vatolahy, or "male stones," 116
 Vavavato district, the, 161, 219
 Vavony, 41
Vazimba, the, 114, 227, 289
 Vegetation, 41, 239
 Vehicles, 27
Vero, 178
Veroisanjy, 178
Vernonia appendiculata, 80
 Village squares, 61
 Villages, 73
 Villages, old-style, 119
 Vine, the, 81
Vinea angivensis, the, 89-90
Vinea rosea, 90
 Vinson, Dr, 162
 Visit of ceremony, a, 24
 Vohilena, 284
 Vohitra volcano, 215
 Volcanic belt, 224
 Volcanoes, extinct, 215
 Volomborona Mountain, 219
 Voromahery or hawk, 84

UNGULATA, species of, 67
 Unhealthiness of the coast, 42
 Unlucky days, 205, 247
 Uranid butterfly, 281
Usnea, 65, 143

WALKING-STICK mantis, 280
 Wallace, Dr A. R., 64

Wasp, black, 99
 Water conveyances, 282
 Water-courses, 79
 Waterfalls, 152, 242
 Water-hens, 210
 Water-lilies, 49, 201
 Water-plants, 201, 281
 Water-pots, 97
 Water-producing insects, 91
 Water-snakes, 134
 Water yam or lace-leaf plant, 53
 Weapons, ancient, 227
 Weaver-bird, 169
 Webs, spiders', 108, 163, 166
 Whales, 275
 Wheeled vehicles, 274
 Whistling teal, 186
 White-backed duck, the, 186
 White lemur, a, 146
 Wild boar or river-hog, 136
 Wild duck on Lake Itasy, 210
 Wild fowl, 185
 Wild man, a, 147
 Windows, absence of, 45
 Winds, prevailing, 75
 Winter, 113
 Words denoting different appearances of nature, 93

YAMS, wild, 152

Zahitra, or raft, a, 247
 Zanatsara clan, 218
 Zomena, Chief, 235
Zozoro, the, 108
Zygæna malleus, 40

